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NOTICE OF CHANGE

MIL-STD-973
INTERIM NOTICE 1 (DO)
1 DECEMBER 1992

MILITARY STANDARD
CONFIGURATION MANAGEMENT

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3.33 Developmental configuration. The contractor's design and associated technical documentation that defines the evolving configuration of a configuration item during development. It is under the developing contractor's configuration control and describes the design definition and implementation. The developmental configuration for a configuration item consists of # the contractor's released hardware and software designs and associated technical documentation until establishment of the formal product baseline.

3.34 Deviation. A specific written authorization, granted prior to the manufacture of an item, to depart from a particular requirement(s) of an item's current approved configuration documentation for a specific number of units or a specified period of time. (A deviation differs from an engineering change in that an approved engineering change requires corresponding revision of the item's current approved configuration documentation, whereas a deviation does not.)

3.35 Engineering change. A change to the current approved configuration documentation of a configuration item at any point in the life cycle of the item.

3.36 Engineering change justification code. A code which indicates the reason for a Class I engineering change.

3.37 Engineering change priorities. The priority (emergency, urgent, routine) assigned to a Class I engineering change which determines the relative speed at which the Engineering Change Proposal is to be reviewed, evaluated, and, if approved, ordered and implemented.

3.38 Engineering Change Proposal (ECP). A proposed engineering change and the documentation by which the change is described, justified, and submitted to the Government for approval or disapproval.

3.39 Engineering Change Proposal types. A term covering the subdivision of Class I Engineering Change Proposals on the basis of the completeness of the available information delineating and defining the engineering change. They will be identified as preliminary or formal.

3.40 Engineering release. An action whereby configuration documentation or an item is officially made available for its intended use.

3.41 Engineering Release Record (ERR). A record used to release configuration documentation.

3.42 Evaluation. See DoD-STD-2168.

3.43 Exchangeability of items. See MIL-STD-280.

3.44 Firmware. See DoD-STD-2167.

3.45 Fit. The ability of an item to physically interface or interconnect with or become an integral part of another item.

3.46 Form. The shape, size, dimensions, mass, weight, and other visual parameters which uniquely characterize an item. For software, form denotes the language and media.

3.47 Function. The action or actions which an item is designed to perform.

3.48 Functional area. A distinct group of system performance requirements which, together with all other such groupings, forms the next lower-level breakdown of the system on the basis of function.

3.49 Functional Baseline (FBL). The initially approved documentation describing a system's or item's functional, interoperability, and interface characteristics and the verification required to demonstrate the achievement of those specified characteristics.

3.50 Functional characteristics. Quantitative performance parameters and design constraints, including operational and logistic parameters and their respective tolerances. Functional characteristics include all performance parameters, such as range, speed, lethality, reliability, maintainability, and safety.

3.51 Functional Configuration Audit (FCA). The formal examination of functional characteristics of a configuration item, prior to acceptance, to verify that the item has achieved the requirements specified in its functional and allocated configuration documentation.

3.52 Functional Configuration Documentation (FCD). The approved functional baseline plus approved changes.

3.53 Hardware. Items made of material, such as weapons, aircraft, ships, tools, computers, vehicles, and their components (mechanical, electrical, electronic, hydraulic, pneumatic). Computer software and technical documentation are excluded.

e. Coordination with internal and external agencies (e.g., program managers, other contractors, other Government agencies, CCBs, foreign governments);

f. Configuration management policies, processes, procedures, methods, records, reports and forms; and

g. Computer-aided Acquisition and Logistics Support (CALS) configuration management in accordance with paragraph 4.3.

4.3 Computer-aided Acquisition and Logistic Support (CALS). Configuration documentation shall be provided in either hard copy data transfer, transfer of processable data files, interactive access to data through contractor integrated technical information services, or a combination of the above, as specified in the contract. The contractor's planning shall address all configuration management technical data requirements of the contract as far as data handling, processing, storage, integrity, transfer, security, and maintenance are concerned, over the performance period of the contract. The contractor shall propose to the Government, as applicable and in accordance with the changes clause of the contract, any requirements that may be imposed on the Government that will require associated contractor effort to maintain the security and integrity of shared data.

# 4.3.1 Data distribution/access. The contractor shall affix
# distribution statements from MIL-STD-1806 in accordance with the
# contract. Access to data shall be limited in accordance with the
# applicable distribution statements, as well as by data rights, Contract Data Requirements List (CDRL) distribution, security requirements, and data status level (released, submitted or approved unless otherwise specified). (See MIL-HDBK-59)

4.3.2 Automated processing and submittal of data. To facilitate processing of submitted data, the contractor shall use automated processing and electronic submittal techniques, when specified in the contract. Where the data requirement is for a form (e.g., DD Form 1692 for an ECP), the contractor may provide the data on an electronic version of the form or may sequentially address the essential and applicable data elements of the
# submitted data by block number and title, as applicable. Textual data in electronic form shall be by paragraph number, or topic heading, as applicable, in accordance with the format and content requirements for the data specified in the contract.

a. When data are submitted by electronically transferring (e.g., modem) by the contractor to the Government, acknowledgement of receipt will be generated at the end

of the transmission. When data is electronically transferred by the Government to the contractor, acknowledgement of receipt by the contractor shall be generated at the end of the transmission. The contractor shall implement a method of error detection for data transfer to insure deliverable data products are capable of being recreated in human readable format.

b. The contractor shall maintain the current status (working, released, submitted, approved) of all digital technical data in the data base at all times. Any data electronically transferred by the contractor to the Government shall be so identified.

c. The contractor shall implement procedures to identify and control data during the contractor and Government review and update cycle. As a minimum, these procedures shall address:

(1) Identification of data files submitted to the Government for review, annotation, comment and approval/disapproval, as applicable in accordance with Government specified review and approval requirements. Each submitted digital data file shall have a unique identifier (e.g., file name) which shall indicate file version, and "submitted" status. To assure file integrity, the file naming convention shall distinguish an altered (annotated, redlined) file version from the originally submitted file version by renaming it as a separate working status file.

(2) How data and changes are transmitted.

(3) How changes from previous versions are indicated.

(4) Notification/acknowledgement of receipt, return, or acceptance.

(5) Indication of time constraints, if any, for automatic data acceptance; and

(6) Data status accounting.

4.3.3 Interactive access to digital data. In addition to the above requirements, the contractor's integrated technical information service shall, where contractually specified, accommodate pre-defined query and extraction of data and shall

implement procedures that define the control of data bases and files during the Government's and contractor's interactive review and update cycles. As a minimum, the following shall be defined:

a. How data is to be accessed;

b. Request for access and logging of access for read-only or annotation;

c. Naming of temporary working version of the file(s) for purpose of annotation/mark up;

d. Means of indicating whether a comment/annotation is essential/suggested;

e. Re-identification of marked up versions, as required;

f. Method of indicating acceptance, provisional acceptance, approval, or rejection, as applicable;

g. Time constraints, if any, on data acceptance (e.g., automatic approval) by any links in the contractor's or the Government's review and approval chains;

h. Automated status accounting, including tracking of disposition of required changes; and

i. Re-identification of changed files.

4.4 Configuration identification. Configuration identification shall include the selection of CIs; the determination of the types of configuration documentation required for each CI; and the issuance of numbers and other identifiers affixed to the CIs and to the technical documentation
# that comprises the CIs' configuration documentation.

4.5 Configuration control. The contractor shall apply internal configuration control measures to the configuration documentation for each CI, prior to the time that it is baselined by the Government. The contractor shall apply configuration

control measures to each baselined configuration item, and its configuration documentation, in accordance with this standard. The configuration control program shall:

a. Ensure effective control of all CIs and their approved configuration documentation.

b. Provide effective means, as applicable, for (1) proposing engineering changes to CIs, (2) requesting deviations or waivers pertaining to such items, (3) preparing Notices of Revision, and (4) preparing Specification Change Notices.

c. Ensure implementation of approved changes.

4.6 Configuration Status Accounting (CSA). The contractor #shall implement a CSA system. The CSA system shall:

a. Identify the current approved configuration documentation and identification number associated with each CI.

b. Record and report the status of proposed engineering changes from initiation to final approval/contractual implementation.

c. Record and report the results of configuration audits to include the status and final disposition of identified discrepancies.

d. Record and report the status of all critical and major requests for deviations and waivers which affect the configuration of a CI.

e. Record and report implementation status of authorized changes.

f. Provide the traceability of all changes from the original baselined configuration documentation of each CI.

g. Report the effectivity and installation status of configuration changes to all CIs at all locations.

4.7 Configuration audits. Configuration audits are performed before establishing a product baseline for the item. Configuration audits consist of the Functional Configuration Audit (FCA) and the Physical Configuration Audit (PCA).

5.3 Configuration identification.

5.3.1 Purpose of configuration identification. The purpose of configuration identification shall be to incrementally establish and maintain a definitive basis for control and status accounting for a CI throughout its life cycle. To accomplish configuration identification, the contractor shall, for both hardware and software:

a. Select CIs;

b. Select configuration documentation to be used to define configuration baselines for each CI;

c. Establish a release system for configuration documentation;

d. Define and document interfaces;

e. Enter each item of configuration documentation and computer software source code into a controlled developmental configuration;

f. Establish the functional, allocated, and product baselines at the appropriate points in the system/CI life cycle, upon Government approval/contractual implementation of the applicable configuration documentation, and in accordance with contract requirements;

g. Assign identifiers to CIs and their component parts and associated configuration documentation, including revision and version numbers where appropriate. Assigning serial and lot numbers, as necessary, to establish the CI effectivity of each configuration of each item of hardware and software;

h. Ensure that the marking or labeling of items and documentation with their applicable identifiers enables correlation between the item, configuration documentation, and other associated data; and

i. Ensure that applicable identifiers are embedded in the source and object code, and where contractually specified, electronically embedded in alterable microprocessor (firmware).

5.3.2 Configuration Item selection. The contractor shall select and recommend potential CIs to the Government. Any item #requiring logistics support and designated for separate procurement is a CI. However, all CIs associated with any given development program are not necessarily designated as CIs at the same point in time. Computer hardware will be treated as CIs. Computer software will be treated as CSCIs throughout the life of the program regardless of how the software will be stored. The final CI selection will be made by the Government. (See 6.3)

5.3.3 Developmental configuration. The contractor shall establish and implement a developmental configuration management #process for both hardware and software. This process shall be used to control the documentation and repositories containing the elements of the developmental configuration. The contractor shall prepare a problem/change report to describe each problem detected in software or documentation that has been placed under internal configuration control. The problem/change report shall describe the corrective action needed and the actions taken to resolve the problem. These reports shall serve as input to the corrective action process. The contractor shall implement a corrective action process for handling all problems detected in the products under internal configuration control. The corrective action process shall ensure that all detected problems are promptly reported, action is initiated on them, resolution is achieved, status is tracked and reported, and records of the problems are maintained for the life of the contract.

5.3.3.1 Documentation library. The contractor shall establish a documentation library and implement procedures for controlling the documents residing within the documentation library.

5.3.3.2 Drawing library. The contractor shall establish a drawing library and implement procedures for controlling the drawings, computer aided design (CAD), and computer aided manufacturing (CAM) instructions residing within the drawing library.

5.3.3.3 Software Development Library. The contractor shall establish a software development library (SDL) and implement procedures for controlling the software residing within the SDL.

5.3.4 Configuration baselines. Configuration management normally employs three types of configuration baselines, the functional, allocated, and product baselines, to provide for the progressive definition and documentation of the requirements and design information describing the various CIs designated for a system. The contractor shall recommend to the Government the types of specifications, in accordance with the order of preference criteria contained in MIL-STD-970, that should be used to define each CI; however, the actual specifications provided shall be those ultimately ordered in the contract. Those specifications are subject to review and approval/contractual implementation by the Government. The appropriate baseline for each CI shall be established with the approval/contractual implementation of that specification as defined in the contract.
# (See 6.3)

5.3.4.1 Configuration baselines and their configuration documentation. The contractor shall establish configuration baselines for all CIs in accordance with the terms of the contract. The FCD, ACD, and PCD defining the configuration baselines shall be mutually consistent and compatible. Each succeeding level of configuration documentation from FCD to ACD to PCD shall be traceable to, and be a detailed extension of, its predecessor(s). If a conflict arises between levels of documentation, the order of precedence shall be (1) FCD, (2) ACD, and (3) PCD.

5.3.4.1.1 Functional Configuration Documentation (FCD). The contractor shall define the documentation required for the functional baseline in accordance with the requirements of the contract. The FCD shall be in the form of a system specification for a system, or a prime item development specification for a single item development program plus other applicable documentation. The FCD shall also identify the configuration documentation for selected items which are to be integrated or interfaced with the CI, such as items separately developed or currently in the inventory.

5.3.4.1.2 Allocated Configuration Documentation (ACD). The contractor shall define the documentation required for the allocated baseline in accordance with the requirements of the contract. The ACD shall define requirements allocated from the FCD or from a higher level CI to a lower level CI. The ACD shall be in the form of development or requirement specifications, referenced interface control drawings/documents, and other applicable documentation. Requirements may be allocated to

facilitate the management of complex CIs, to facilitate the development and integration of system components, or to focus management attention on critical or high-risk components.

5.3.4.1.3 Product Configuration Documentation (PCD). The contractor shall define the documentation required for the product baseline to a level of detail commensurate with logistics support requirements and procurement strategies, in accordance with the requirements of the contract. The PCD shall be in the form of product, material, and process specifications, engineering drawings, military specifications, and other technical documentation comprising a complete technical data package for the CI. The PCD may also be in the form of the #actual equipment and/or software media. The PCD shall prescribe the necessary physical and functional characteristics of the CI and the verifications required to demonstrate required performance. The contractor shall document the PCD as specified in the contract.

5.3.4.2 Maintenance of configuration documentation. Once the related configuration baseline has been established, the contractor shall control and maintain the originals of the current approved configuration documentation for all configuration items specified in the contract.

5.3.5 Engineering release and correlation of manufactured #products. The contractor shall establish/maintain an engineering release system and shall use the system to issue configuration documentation to functional activities (e.g., manufacturing, logistics, quality assurance, acquisition) and to authorize the use of configuration documentation associated with an approved configuration. The contractor shall maintain current and historical engineering release information for all configuration documentation of all configuration items and their component parts. The engineering release system shall interrelate with the contractor's internal system of controls to assure that all #engineering changes have been incorporated in production items as specified. The contractor's engineering release and control system shall meet the minimum information content requirements and tracking capabilities specified in Appendix B for verifying that manufactured products correlate with the released engineering data.

5.3.5.1 Specification release and approval. The contractor shall include on each CI specification a contractor's release signature indicating that the document has been reviewed and is suitable for its intended use. In addition, the contractor shall submit each such specification to the Government for an approval signature. Approval by the Government will normally be accomplished on the version of the specification submitted for a

baseline. Completion of the release and approval activities indicates mutual acceptance by the Government and the contractor of the CI's requirements, as defined in the specification and referenced documents. After approval the specification establishes the appropriate baseline.

5.3.5.2 Requirements for Engineering Release Records (ERRs).

5.3.5.2.1 Use of ERRs. When required by contract, the contractor shall utilize a DD Form 2617, "Engineering Release Record", completed in accordance with the requirements of Appendix C to release new or revised configuration documentation to the Government for approval. (If additional space is needed to list documentation, a DD Form 2617C, "Engineering Release Record Continuation Page" shall be used.) The Government approved ERR releases the configuration documentation for use by all contractor and Government activities. The contractor shall also ensure that information about the newly released and approved configuration documentation is incorporated into the CSA information system. (See 6.3)

5.3.5.2.2 Initial release. Configuration documentation shall be initially released, including the incorporation of related information into the configuration status accounting information system, by means of a Government-approved ERR. # Configuration documentation, software or combinations thereof that establish a baseline, shall only be released as a complete package, ready for approval and contractual implementation by the Government, except under extraordinary circumstances as approved by the Government.

5.3.5.2.3 Change release. Changes to the released configuration documentation shall only be accomplished as a result of an approved Class I or Class II engineering change. Such change releases shall be accomplished utilizing the ERR. The releases shall only be accomplished when the complete package of affected documentation is ready for simultaneous release, except under extraordinary circumstances as approved by the Government.

5.3.5.2.4 Consolidation of multiple changes into a single ERR. Unrelated ECPs may be combined into a single revision to a document provided that:

a. All changes apply to the same end item.

b. All changes apply to the same revision/version.

c. A separate ECP was processed for each unrelated change.

5.3.6 Configuration identifiers. CIs and their configuration documentation shall be assigned unique identifiers as described below.

5.3.6.1 CAGE Code. The design activities and the manufacturers of CIs shall be identified by the Government assigned CAGE Code, which shall be affixed to all CIs, their subordinate parts and assemblies, configuration documentation, software media and products.

5.3.6.2 Government type designators and nomenclature. Each CI that is designated by the Government for control, tracking and logistics purposes shall be assigned Government type designators and nomenclature in accordance with the requirements of the contract.

5.3.6.3 Document numbers. An identification number shall be assigned and applied to specifications and all revisions in accordance with MIL-STD-961 or MIL-STD-490, and to engineering drawings, associated lists and ancillary documents and all revisions in accordance with MIL-STD-100.

5.3.6.4 Part/item identification numbers. A discrete part/item identification number shall be assigned to each CI and its subordinate parts and assemblies and be changed in accordance with MIL-STD-100 (e.g., whenever a non-interchangeable condition is created).

5.3.6.5 Software identifiers. For each CSCI, the contractor shall identify its corresponding Computer Software Components (CSCs) and Computer Software Units (CSUs). For each CSCI, CSC, and CSU the contractor shall issue/obtain a software identifier, which shall consist of a name or number, and a version identifier, and shall relate the software to its associated software design documentation; revision; and release date. The contractor shall embed the software and version identifiers within the source code, and provide a method for display of the software and version identifier data to the user upon command.

5.3.6.6 Serial/lot numbers. The contractor shall assign serial/lot numbers to like items, or to groups (lots) of like items, identified with a specific Government nomenclature, unless otherwise specified in the contract. The serial/lot numbers

5.3.7.2.1 ICWG membership. The contractor shall be responsible for providing a representative to the ICWG who is empowered to commit the contractor to specific interface actions and agreements; for assuring that the representative is present at all ICWG meetings; for providing draft interface control documentation at a specified period prior to the ICWG meeting where it will be discussed; for updating, releasing, and controlling interface control documentation reflecting the ICWG decisions; and for distributing copies of such released interface control documentation to other ICWG participants.

5.3.7.2.2 ICWG Chairmanship. The contractor designated as the interface control contractor shall act as the chair for the ICWG and shall be accountable to the Government to report interface problems as they are surfaced by the ICWG. The contractor shall be responsible for scheduling ICWG meetings; for providing the meeting space and administrative support; for distributing interface control documentation to be addressed at the upcoming ICWG; for conducting the ICWG meetings; for making interface decisions when they can be implemented within the current scope of the contracts of the participants; for coordinating ECPs as required; for recording and distributing the minutes of the ICWG meetings; and for ensuring that updated interface control documentation reflecting the ICWG decisions is distributed within the time frame agreed to by the affected
# participants. (See 6.3)

5.4 Configuration control. Configuration control is the systematic proposal, justification, evaluation, coordination, approval or disapproval of proposed changes, and the implementation of all approved changes, in the configuration of a CI after establishment of the configuration baseline(s) for the CI.

5.4.1 Purpose of configuration control. The contractor shall implement a configuration control function that ensures regulation of the flow of proposed changes, documentation of the complete impact of the proposed changes, and release only of approved configuration changes into CIs and their related configuration documentation. Configuration control begins with the establishment of the functional baseline and continues as further configuration baselines are established for the CIs, using the FCD, the ACDs, and the PCDs contractually invoked by the Government. Configuration control continues throughout the life cycle of the CI. The following requirements shall apply only to the FCD, the ACDs, and the PCDs which have been approved/contractually implemented by the Government.

# 5.4.2 Requirements for Engineering Change Proposals. An Engineering Change Proposal shall be required for any changes to the current approved configuration documentation.

5.4.2.1 The engineering change process. The contractor shall include the following elements in the configuration control process.

a. Determination of a need for the change.

b. Establishment by the contractor of a classification of the engineering change as Class I or Class II.

c. Review and evaluation of the change.

d. Disposition of the change.

e. Preparation of an ECP.

f. Submittal of the ECP to the Government.

g. Incorporation of approved (or concurred in) engineering changes in the documentation, including, when applicable, negotiation into the contract.

h. Implementation of the change in accordance with the contract.

Note: Similar steps shall apply to requests for deviations and waivers.

5.4.2.2 Administrative requirements.

5.4.2.2.1 Classification of engineering changes. An engineering change shall be classified as Class I or Class II by the preparing contractor in accordance with this standard. Class I ECPs shall be referred to the Government for approval or disapproval. Classification disagreements shall be referred to the Government for final decision. A proposed engineering change to a CI, or to any combination or discrete portion thereof, shall be determined to be Class I by examining the factors below, as contractually applicable, to determine if they would be impacted as a result of implementing the change. The change shall be Class I if:

a. The FCD or ACD, once established, is affected to the extent that any of the following requirements would be outside specified limits or specified tolerances:

b. Minor revisions to an ECP (such as those which correct errors, add or delete information, update pricing, or provide clarifications) may be made by attaching new or revised pages to a reaccomplished Page 1 of the ECP form.

c. In either case, the information which differs from the original ECP shall be clearly identified in a manner similar to the marking of change pages for specifications. Block 19 of the ECP form should include information as to whether the revision is a resubmittal, replacing the existing ECP in its entirety, or provides change pages to the existing ECP.

5.4.2.2.3.3 Supporting data. Formal ECPs shall be supported by drawings and other data (e.g., LSA data, detailed cost proposal data, test data and analyses) as specified in the contract to justify and describe the change and to determine its total impact including assessments of changes to system
# operational employment characteristics. When a life cycle cost
# and/or operation and support cost model has been included in the
# contract, the ECP shall also include the costs expected to result
# from the implementation of this change into all future production
# and spare items projected to be procured for the program and all
# projected operation and support costs for operation of the total
# inventory of items by the Government. A summary of any testing done by the contractor to validate concepts or new technology to be employed in the proposed engineering change shall be presented in the supporting data, and details of such test data shall be provided if it is vital to the decision regarding acceptance of the change.

5.4.2.2.3.4 Classified data. When practicable, the ECP should be unclassified. Classified data essential to the evaluation and disposition of an ECP shall be submitted separately in accordance with the approved security procedures and referenced in the unclassified portion of the ECP. The contractual DD Form 254 or DoD Contract Security Classification Specification applies.

5.4.2.3 Class I engineering change proposals. Class I engineering changes should be limited to those which are necessary or offer significant benefit to the Government. Such changes are those required to:

a. Correct deficiencies.

b. Add or modify interface or interoperability requirements.

c. Make a significant and measurable effectiveness change in the operational capabilities or logistics supportability of the system or item.

d. Effect substantial life cycle costs/savings, or

e. Prevent slippage in an approved production schedule.

5.4.2.3.1 Class I ECP decisions.

5.4.2.3.1.1 Target for technical decision on Class I ECPs. The criticality of the need for decision will dictate the actual processing time for ECPs. Emergency and urgent ECPs should be proposed based upon the targets below unless otherwise agreed to between the contractor and the Government. Processing targets for routine ECPs will be tailored to maximize cost effectiveness, recognizing the program, system, and ECP complexity. The target for technical decision on Class I ECPs assigned the various priorities (see 5.4.2.3.4) will be the following:

| | | |
|---|---|---|
| a. | Emergency | 48 hours |
| b. | Urgent | 30 calendar days |
| c. | Routine | 90 calendar days |

5.4.2.3.1.2 ECP authorization. Unless otherwise specified by the Government, receipt of contractual authorization shall constitute the sole authority for the contractor to effect a Class I change. Authorization of the change granted by the Government will include reference to the ECP by number, revision (if applicable), and date. Such authorization will normally not occur until the Government has performed a review for technical adequacy and supportability.

5.4.2.3.1.3 Class I compatibility engineering changes. This category of change is intended to allow expeditious corrective action when the need for a change has been discovered during system or item functional checks or during installation and checkout. The contractor shall notify the Government by written message within 48 hours after determining that a compatibility change is necessary. The message shall define the need for a compatibility change and identify factors that will be impacted, including estimated costs and schedules. Unless otherwise prohibited by the contract, corrective action may then be implemented immediately by the contractor to resolve such incompatibilities, but only for the specific item(s) situated in the location at which the deficiency was originally discovered. All aspects of the compatibility definition (reference paragraph 5.4.2.3.2b) must apply. In addition, a Class I compatibility ECP shall be required within 30 days after initial notification. Where further action is necessary due to "lead time" considerations, the contractor may initiate procurement or

manufacturing action and shall advise the Government with a change message referencing the serial number(s) and locations of additional items involved. The contractor assumes total risk for implementation of such a change prior to Government authorization, except in those cases where the Government caused the incompatibility.

5.4.2.3.1.4 Disapproval of ECPs. When the Government disapproves an ECP, the originator will be notified in writing within 30 calendar days of the decision and will be given the reason(s) for the disapproval.

5.4.2.3.2 Class I ECP justification codes. Justification codes corresponding with the criteria necessary for beneficial engineering changes are listed below. If more than one of these codes are applicable, the one which is the most descriptive or significant shall be assigned to the ECP.

a. Interface (Code B). Code B shall be assigned to an engineering change proposed to eliminate incompatibility between CIs.

b. Compatibility (Code C). Code C shall be assigned to an engineering change to correct a deficiency with the following characteristics:

(1) The need for the change has been discovered during the system or item functional checks or during installation and checkout and is necessary to make the system or item work.

(2) By assigning the compatibility code the contractor is declaring that the effort required to accomplish the change is considered to be within the scope of the existing contract except for changes caused by the Government.

(3) Contractual coverage completing the formal documentation of the engineering change will not reflect an increase in contract price for the corrective action in production and to delivered items in-warranty or otherwise stipulated in the contract.

c. Correction of deficiency (Code D). Code D shall be assigned to an engineering change which is required to eliminate a deficiency, unless a more descriptive separate code applies. Such separate codes are used to

identify deficiencies of the nature of safety, interface, or compatibility.

d. Operational or logistics support (Code O). Code O shall be assigned to an engineering change which will make a significant effectiveness change in operational capabilities or logistics support.

e. Production stoppage (Code P). Code P shall be assigned to an engineering change which is required to prevent slippage in an approved production schedule. This code applies when production to the current configuration documentation either is impracticable or cannot be accomplished without delay.

f. Cost reduction (Code R). Code R shall be assigned to an engineering change which will provide a net total life cycle cost savings to the Government, but which is not being submitted pursuant to the Value Engineering clause of the contract. The savings in life cycle cost should include all effects on cost and price for the effort and requirements covered by the contract(s) currently in effect for this contractor, plus the costs resulting from necessary associated changes in
# delivered items, and logistics support.

g. Safety (Code S). Code S shall be assigned to an engineering change for correction of a deficiency which is required primarily to eliminate a hazardous condition. When this code is assigned, a system hazard analysis per MIL-STD-882 shall be included with the ECP.

h. Value engineering (VE) (Code V). Code V shall be assigned to an engineering change which will effect a net life cycle cost reduction and which is submitted pursuant to the VE clause of the contract.

# topic for a change proposal. (Emergency, urgent, and
# compatibility type ECPs do not require an ACSN prior to submittal.) If the contractor originates a change idea, the required information shall be provided for Government review. Upon receipt of a Government-originated ACSN, the contractor shall evaluate the change idea (and any alternative courses of action identified by the Government). If authorized to do so by the contract or the ACSN transmittal letter, and if in agreement with the change idea, the contractor shall proceed with preparation of the formal Routine ECP. Otherwise, the contractor shall provide additional information about the change to the Government for further study. In any case, the contractor shall not proceed with the preparation of the formal ECP until directed to do so by the Government. The contractor shall use DD Form 2616, "Advanced Change Study Notice (ACSN)," Figure 1, when specified in the contract. Detailed instructions on completion of DD Form 2616 are noted in Blocks 6 through 10 of the form. (When ACSNs are required by the contract, the procedures shall be documented in the CM Plan.) (See 6.3)

5.4.2.3.3.2 Use of Formal ECP (Type F). A formal ECP is the type which provides engineering information and other data in sufficient detail to support formal change approval/contractual implementation.

5.4.2.3.4 Class I engineering change priorities. A priority shall be assigned to each Class I ECP based upon the following definitions. The assigned priority will determine the time frame in which the ECP is to be reviewed, evaluated, ordered, and implemented. The proposed priority is assigned by the originator and will stand unless the Government has a valid reason for changing the priority.

a. Emergency. An emergency priority shall be assigned to an engineering change proposed for either of the following reasons:

(1) To effect a change in operational characteristics which, if not accomplished without delay, may seriously compromise national security;

(2) To correct a hazardous condition which may result in fatal or serious injury to personnel or in extensive damage or destruction of equipment. (A hazardous condition usually will require withdrawing the item from service temporarily, or suspension of the item operation, or discontinuance of further testing or development pending resolution of the condition.); or

(3) To correct a system halt (abnormal termination) in the production environment such that CSCI mission accomplishment is prohibited.

b. Urgent. An urgent priority shall be assigned to an engineering change proposed for any of the following reasons:

(1) To effect a change which, if not accomplished expeditiously, may seriously compromise the mission effectiveness of deployed equipment, software, or forces; or

(2) To correct a potentially hazardous condition, the uncorrected existence of which could result in injury to personnel or damage to equipment. (A potentially hazardous condition compromises safety and embodies risk, but within reasonable limits, permits continued use of the affected item provided the operator has been informed of the hazard and appropriate precautions have been defined and distributed to the user.); or

(3) To meet significant contractual requirements (e.g., when lead time will necessitate slipping approved production or deployment schedules if the change was not incorporated); or

(4) To effect an interface change which, if delayed, would cause a schedule slippage or increase cost; or

(5) To effect a significant net life cycle cost savings to the Government, as defined in the contract, through value engineering or through other cost reduction efforts where expedited processing of the change will be a major factor in realizing lower costs.

(6) To correct unusable output critical to mission accomplishment;

(7) To correct critical CI files that are being degraded; or

The DD Form or the contractor's own form shall be used as format for submittal of Class II engineering changes to obtain Government concurrence in classification only. As a minimum, the format used to obtain Government concurrence only shall include:

a. Name and part number of item affected.

b. Name and part number of next higher assembly.

c. Description of the engineering change.

d. Reason for making the engineering change.

e. All Government contract number(s) for which the change will apply.

f. Change document number.

5.4.2.4.2 Class II justification codes. The justification codes for Class I engineering changes need not be applied to a Class II engineering change.

5.4.2.4.3 Concurrence in Class II changes. Unless otherwise specified by the Government, or unless 5.4.2.4.4 or
# 5.4.2.4.5 applies, Government review of Class II changes during production will consist of a technical evaluation of the change and of material substitutions to support concurrence in classification recommendations. The contractor shall obtain Government concurrence prior to or concurrent with the release of the Class II change. The contractor assumes total risk for implementation of changes prior to notification of Government concurrence.

5.4.2.4.4 Approval of Class II changes. When the Government has required by contract that it approve each Class II change, the contractor shall not implement the change until approved by the Government.

5.4.2.4.5 Non-custody of the original drawings. When the contractor or his subcontractors do not have custody of the original drawings delineating the detail design, and when compliance with such drawings is a contract requirement, each Class II engineering change is subject to approval by the Government prior to implementation as specified in the contract.

5.4.3 Requirements for Requests for Deviation (RFD). The contractor shall not manufacture items for acceptance by the Government that incorporate a known departure from requirements, unless a request for a deviation has been approved in accordance

with the requirements of this standard. Authorized deviations are a temporary departure from requirements and do not constitute a change to the FCD, ACD,or PCD. Prior to manufacture of an item, if a contractor considers it necessary to temporarily depart from the requirements, the contractor may request a deviation. Deviations do not apply to software code listings. Where it is determined that a change should be permanent, a Class I or Class II engineering change must be processed in accordance with this standard.

5.4.3.1 Restrictions on deviations. Unless unusual circumstances exist, critical deviations and deviations which would affect service operation, logistic interoperability, or maintenance (e.g., repair parts, operation or maintenance procedures, or compatibility with trainers or test sets) shall not be requested. The effectivity of the request for deviation normally should not include the entire remaining number of deliverable units on the contract; if that is the case, an engineering change should be submitted.

5.4.3.2 Recurring deviations. Submittal of recurring deviations is discouraged and shall be minimized. If a proposed deviation is recurring (a repetition or extension of a previously approved deviation), it is probable that either the requirements of the documentation are too stringent or the corrective action of the manufacturer was ineffective. If it is necessary for a contractor to request a deviation for the same situation with the same item more than two times, then the need for an engineering change, rather than a deviation, shall be addressed between the Government and the contractor.

5.4.3.3 Classification of deviations. Each request for deviation shall be designated as critical, major, or minor by the originator in accordance with this standard. Classification disagreements shall be referred to the Government for decision.

5.4.3.3.1 Minor. A deviation shall be designated as minor when:

a. The deviation consists of a departure which does not involve any of the factors listed in 5.4.3.3.3 or 5.4.3.3.2 or

b. When the configuration documentation defining the requirements for the item classifies defects in requirements and the deviations consist of a departure from a requirement classified as minor. (See MIL-STD-109)

5.4.3.3.2 Major. A deviation shall be designated as major when:

a. The deviation consists of a departure involving: (1) health; (2) performance; (3) interchangeability, reliability, survivability, maintainability, or durability of the item or its repair parts; (4) effective use or operation; (5) weight; or (6) appearance (when a factor) or

b. When the configuration documentation defining the requirements for the item classifies defects in requirements and the deviations consist of a departure from a requirement classified as major. (See MIL-STD-109)

5.4.3.3.3 Critical. A deviation shall be designated as critical when:

a. The deviation consists of a departure involving safety or

b. When the configuration documentation defining the requirements for the item classifies defects in requirements and the deviations consist of a departure from a requirement classified as critical. (See MIL-STD-109)

5.4.3.4 Format. Unless otherwise specified, the contractor shall use DD Form 1694, "Request for Deviation/Waiver", (See Appendix E), a contractor designed form, or a letter to request a deviation. Each request shall contain all information required by Appendix E. If DD Form 1694 is used, the form shall be prepared in accordance with Appendix E. (See 6.3)

5.4.3.5 Disposition of deviations. Unless otherwise specified in the contract, requests for critical or major deviations should be approved or disapproved within 30 calendar days of receipt by the Government, and minor deviations should be approved or disapproved within 15 calendar days of receipt by the Government.

5.4.3.5.1 Minor deviations. Unless otherwise specified by the Government, minor deviations shall be authorized (or disapproved) for the Government by the activity authorized to approve or concur in classification of Class II changes.

5.4.3.5.2 Critical and major deviations. Unless otherwise specified by the Government, critical and major deviations shall only be approved by a Government contracting officer.

5.4.4 Requirements for Requests for Waiver (RFW). The contractor shall not offer, for acceptance by the Government, items that incorporate a known departure from requirements, unless a request for waiver has been approved in accordance with this standard. Authorized waivers apply to a specific quantity of manufactured items and do not constitute change to the FCD, ACD, or PCD. The contractor may process a request for waiver if, during or after manufacture of an item which incorporates a known departure from requirements, it is determined that the item is considered suitable for use "as is" or after repair by an approved method. Waivers do not apply to software code listings. Where it is determined that a change should be permanent, a Class I or Class II engineering change must be processed in accordance with this standard.

5.4.4.1 Restrictions on waivers. Unless unusual circumstances exist, critical waivers and waivers which would affect service operation, logistic interoperability, or maintenance (e.g., repair parts, operation or maintenance procedures, or compatibility with trainers or test sets) shall not be requested. The effectivity of the request for waiver normally should not include the entire remaining number of deliverable units on the contract; if that is the case, an engineering change should be submitted.

5.4.4.2 Recurring waivers. Submittal of recurring waivers is discouraged and shall be minimized. If a proposed waiver is recurring (a repetition or extension of a previously approved waiver), it is probable that either the requirements of the documentation are too stringent or the corrective action of the manufacturer was ineffective. If it is necessary for a contractor to request a waiver for the same situation with the same item more than two times (or for the remainder of the contracted quantity of deliverable units), then the need for an engineering change, rather than a waiver, shall be addressed between the Government and the contractor.

5.4.4.3 Classification of waivers. Each request for waiver shall be designated as critical, major, or minor by the originator in accordance with this standard. Classification disagreements shall be referred to the Government for decision.

adjacent to the change and encompassing all changed portions. When changed pages are issued for specifications with pages printed on both sides of a sheet, and only the page on one side of a sheet is affected by the change, both sides of the sheet shall be reissued. The unchanged side shall be reprinted without change and shall not carry the date of the change or be included in the change summary as being affected by the change.

5.4.7 Requirements for Notices of Revision (NORs). The DD Form 1695, "Notice of Revision", (See Appendix G) shall be utilized to describe the exact change(s) to be made to each drawing, associated list, or other affected document in accordance with Appendix G, when specified as a data requirement in the contract. (NORs are normally applicable where documents
# affected by the ECP are not controlled by the ECP preparing activity.) (See 6.3)

5.4.8 Configuration control (short form procedure).

5.4.8.1 Purpose. The purpose of the short form procedure
# is for use with items for which the prescribed detail design was not developed by the contractor and for which the contractor can not be expected to know the total impact of a proposed change. The Government will normally be responsible for determination of possible effects of engineering changes on higher level or associated items and similarly for impact of deviations and waivers. It may also be applied to privately developed items (e.g., commercial off-the-shelf items), when the contracting activity has determined that the application of change control to such items is necessary. The short form procedure will only be applicable when specifically required by the contract.

5.4.8.2 Requirements for ECPs. When a permanent change is desired, to the configuration documentation prescribed by the contract, an ECP is required. Contractual authorization shall be required prior to implementation of an ECP which affects contract cost, fee, schedule or technical requirements specified either in the contract or in the configuration documentation prescribed directly by its identifying number in the contract.

5.4.8.2.1 ECP format. The DD Forms 1692 through 1692/6 shall be used for submittal of engineering changes (other than any initial communication or written message). Local reproduction of this form, as illustrated by Figure 9, is authorized. Automated processing may be used in accordance with 4.3. The short form shall be prepared in accordance with the instructions for DD Form 1692 (Page 1) in Appendix D. (See 6.3)

5.4.8.2.2 Expediting ECPs. An ECP which, in the contractor's judgement, requires immediate action, may be initiated by telephone, message, personal contact, or electronic transmittal to be followed by the contractor's written statement within three (3) work days. If the initial reaction by the addressee of the communication is favorable, a written ECP in accordance with this standard shall be submitted as soon as practicable, but not later than 30 calendar days after the first communication.

5.4.8.2.3 Revisions. An ECP shall be revised when major alterations or changes to the initial ECP are necessary in accordance with 5.4.2.2.3.2 of this standard.

5.4.8.2.4 ECP coverage. Unrelated engineering changes shall not be covered by the same ECP; rather, a separate ECP shall be prepared for each engineering change.

5.4.8.2.5 ECP supporting data. ECPs shall be supported by marked copies of drawings, other technical documentation or parts thereof and the information, as required to justify and describe the change. ECPs originated by subcontractors may be included as supporting data.

5.4.8.2.6 ECP approval. Approval of an ECP will be achieved by:

a. The signature on the ECP form of the contracting activity or a review activity specifically identified in the contract and by the return of an approved copy to the contractor; or

b. Modification when the ECP affects the contract.

5.4.8.2.7 Disapproval. When an ECP is disapproved, the Government will notify the contractor of such disapproval in writing within 30 calendar days of the disapproval date giving the reason(s) for disapproval.

5.4.8.3 Requirements for deviations. Prior to manufacture of an item, if a contractor considers it necessary to temporarily depart from the mandatory requirements of the specification or drawings, the contractor may request that a deviation be authorized. As an example, a deviation relating to an alternative material, process, functional, or dimensional requirement may be requested. Items shall not be delivered incorporating a known departure from documentation unless a request for deviation has been approved in accordance with the requirements of this standard, or unless otherwise contractually

d. For those requirements which cannot be completely verified through the use of testing, the FCA shall determine whether adequate analyses or simulations have been accomplished and whether the results of the analyses or simulations are sufficient to insure that the CI meets the requirements in the specification. All ECPs that have been approved shall be reviewed to ensure that they have been technically incorporated and verified.

e. An audit of the test reports shall be performed to validate that the reports are accurate and completely describe the CI tests. Test reports, procedures, and data used by the FCA team shall be made a matter of record in the FCA minutes.

f. A list of the contractor's internal configuration documentation of the HWCI shall be reviewed to insure that the contractor has documented the physical configuration of the HWCI for which the test data are verified.

g. Drawings of the CI parts which are to be provisioned shall be selectively sampled to assure that test data essential to manufacturing are included on, or furnished with, the drawings.

h. CIs which fail to pass quality requirements are to be analyzed as to the cause of failure to pass. Appropriate corrections shall be made before a CI is subjected to a reverification.

i. Acknowledge accomplishment of partial completion of the FCA for those CIs whose verification is contingent upon completion of integrated system testing.

j. For CSCIs the following additional requirements shall apply:

(1) Review data base characteristics, storage allocation data and timing, and sequencing characteristics for compliance with specified requirements.

(2) Review all documents which comprise or describe the contents or the use of the software product for format and completeness. (e.g., SPS, User's Manual, VDD)

(3) Review the records that reflect the changes made to the developmental configuration for the CSCI.

(4) Review the listing of all versions of the developmental and non-developmental software for the CSCIs that are in the software library.

(5) Review the findings of all internal CM and software QA audits of the CSCI.

k. Preliminary and Critical Design Review (CDR) minutes shall be examined to ensure that all findings have been incorporated and completed.

5.6.2.4 Post-audit actions. After the FCA is completed, the contractor shall:

a. Publish copies of the FCA minutes.

b. Record the accomplishment and results of the FCA in the CSA Record for each CI audited.

c. Accomplish residual tasks for which they were identified as the responsible activity.

5.6.2.5 FCA Certifications. A sample FCA certification #package is shown in Figures 5a - 5g. When specified in the #contract, a Configuration Audit Summary Report, consisting of the #applicable information of the certification package shall be #required. (See 6.3)

5.6.3 Physical Configuration Audit (PCA). The PCA shall be the formal examination of the as-built configuration of a CI against its design documentation. The PCA for a CI shall not be started unless the FCA for the CI has already been accomplished or is being accomplished concurrent with the PCA. After successful completion of the audit and the establishment of a PBL, all subsequent changes are processed by formal engineering change action. The PCA also determines that the acceptance testing requirements prescribed by the documentation is adequate for acceptance of production units of a CI by quality assurance activities. The PCA includes a detailed audit of engineering drawings, specifications, technical data, tests utilized in production of CIs, and design documentation, listings, and operation and support documents for CSCIs. The PCA shall include an audit of the released engineering documentation and quality control records to make sure the as-built or as-coded

WAIVERS/DEVIATIONS

CONFIGURATION ITEM NOMENCLATURE: _____

| REFERENCE (Spec, STD, Etc.) | CCB OR MRB APPROVAL/DIRECTIVE | REQUIREMENT WAIVED | REMARKS |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

FIGURE 5g. FCA Certification Package - Continued

REPRINTED WITHOUT CHANGE

configuration is reflected by this documentation. For software, the product specification, Interface Design Document, and VDD shall be a part of the PCA.

a. The PCA shall be conducted on a unit of the item selected jointly by the Government and the contractor.

b. Satisfactory completion of a PCA and approval of the product specification are necessary for the Government to establish the PBL for a CI.

5.6.3.1 Contract requirements. The schedule dates, and actual accomplishment dates, for the PCAs shall be recorded in the CSA information system. All internally-, and Government-, approved engineering changes shall be incorporated into new revisions of the applicable configuration documentation prior to the PCA. In addition, the contractor shall make the final draft copy of the product specification available to the Government for review prior to the PCA, as specified in the contract.

# 5.6.3.2 Contractor responsibility. Prior to the audit
#date, the contractor shall provide the following information to the Government:

# a. Contractor representation.

b. Identification of items to be audited by:

(1) Nomenclature.

(2) Specification Identification Number.

(3) CI Identifiers.

(4) Serial Numbers.

(5) Drawing and Part Numbers.

# (6) CAGE Codes.

c. A list delineating all deviations/waivers against the CI either requested or Government approved.

d. Reference information to the CI being audited as follows:

(1) CI product specification.

(2) A list delineating both approved and outstanding changes against the CI.

(3) Complete shortage list.

(4) Acceptance test procedures and associated test data.

(5) Engineering drawing index including revision letters.

(6) Operating and support manuals; including operators manuals, maintenance manuals, illustrated parts breakdown, programmer's manuals, diagnostic manuals, etc.

(7) Proposed DD Form 250, "Material Inspection and Receiving Report."

(8) Approved nomenclature and nameplates.

(9) VDDs, for software.

(10) FCA minutes for each CI.

(11) Findings/Status of Quality Assurance Programs.

(12) Program parts selection list.

(13) Interface Design Document for software.

e. Assemble and make available to the PCA team at time of audit all data describing the item configuration, to include:

(1) Current approved issue of hardware development and software and interface requirements specifications to include approved SCNs and approved deviations/ waivers.

(2) Identification of all changes actually made during test.

(3) Identification of all required changes not completed.

(4) All configuration documentation, or electronic representations of the same, required to identify the CI.

# (5) Manufacturing instructions, manufacturing instruction sheets or computer-aided manufacturing (CAM) data related to drawings and computer-aided design (CAD) presentations of specified parts identified by the Government.

f. Identify any difference between the physical configurations of the selected production unit and the development unit(s) used for the FCA and shall certify or demonstrate to the Government that these differences do not degrade the functional characteristics of the selected units.

g. A sample PCA Checklist is shown in Figure 6.

5.6.3.3 PCA procedures and requirements. The following actions shall be performed as part of each PCA:

a. A representative number of drawings (and/or CAD presentations) and associated manufacturing instruction sheets (and/or CAM data) for each item of hardware, identified by the Government co-chairperson, shall be reviewed to determine their accuracy and insure that they include the authorized changes reflected in the engineering drawings (and/or CAD presentations) and the hardware. Unless otherwise directed by the Government co-chairperson, inspection of drawings (and/or CAD presentations) and associated manufacturing instructions (and/or CAM data) may be accomplished on a valid sampling basis. The purpose of this review is to insure that the manufacturing instructions (and/or CAM data) accurately reflect all design details contained in the drawings (and/or CAD presentations). Since the hardware is built in accordance with the manufacturing instructions (and/or CAM data), any discrepancies between the manufacturing instructions (and/or CAM data) and the design details and changes in the drawings (and/or CAD presentations) will be reflected in the hardware.

## PCA CHECKLIST

The following hardware, computer software, documentation shall be available, and the following tasks shall be accomplished at the PCA.

Hardware:

Computer Software:

| Documentation: | YES | NO |
|---|---|---|
| (1) Approved final draft of the configuration item product specification. | ____ | ____ |
| (2) A list delineating both approved and outstanding changes against the configuration item. | ____ | ____ |
| (3) Complete shortage list. | ____ | ____ |
| (4) Acceptance test procedures and associated test data. | ____ | ____ |
| (5) Engineering Drawing Index. | ____ | ____ |
| (6) Operating, maintenance, and illustrated parts breakdown manuals. | ____ | ____ |
| (7) List of approved material review board actions on waivers. | ____ | ____ |
| (8) Proposed DD Form 250, "Material Inspection and Receiving Report." | ____ | ____ |
| (9) Approved nomenclature and nameplates. | ____ | ____ |
| (10) Manuscript copy of all software CI manuals. | ____ | ____ |
| (11) Computer Software Version Description Document. | ____ | ____ |
| (12) Current set of listings and updated design descriptions or other means of design portrayal for each software CI. | ____ | ____ |
| (13) FCA minutes for each configuration item. | ____ | ____ |
| (14) Program Parts Selection List (PPSL) (see MIL-STD-965). | ____ | ____ |
| **Tasks:** | | |
| (1) Define Product Baseline. | ____ | ____ |
| (2) Specification Review and Validation. | ____ | ____ |
| (3) Drawing Review. | ____ | ____ |
| (4) Review acceptance test procedures and results. | ____ | ____ |
| (5) Review shortages and unincorporated design changes. | ____ | ____ |
| (6) Review deviations/waivers. | ____ | ____ |
| (7) Examine proposed DD 250. | ____ | ____ |
| (8) Review contractor's Engineering Release and Change Control System. | ____ | ____ |
| (9) Review system allocation document. | ____ | ____ |
| (10) Review Software User's Manuals, Software Programmer's Manuals, Computer System Operator's Manual, and Firmware Support Manual. | ____ | ____ |
| (11) Review software CIs for the following: | | |
| (a) Preliminary and detail Software Component design descriptions. | | |
| (b) Preliminary and detail Software interface requirements. | | |
| (c) Data base characteristics, storage allocation charts and timing and sequencing characteristics. | ____ | ____ |
| (12) Review packaging plan and requirements. | ____ | ____ |
| (13) Review status of Rights in Data. | ____ | ____ |
| (14) Ensure that all appropriate items installed in the deliverable hardware, that should have been processed through the PCP, are identified on the PPSL or that the necessary approval documentation is avalilable and that the hardware does not contain items that should have been processed through the PCP but were not (see MIL-STD-965). | ____ | ____ |

Figure 6. Sample PCA Checklist

b. The following minimum information shall be recorded in the minutes for each drawing (and/or CAD presentation) reviewed:

(1) Drawing number/title (include revision letter).

(2) List of manufacturing instructions and/or CAM data (numbers with change letter/titles) associated with this drawing.

(3) Discrepancies/comments.

(4) A sample of part numbers reflected on the drawing. Check to insure compatibility with the Program Parts Selection List, and examine the CI to insure that the proper parts are actually installed.

c. As a minimum, the following inspections shall be accomplished for selected drawings (and/or CAD presentations) and associated manufacturing instructions (and/or CAM data):

(1) Drawing number identified on manufacturing instructions (and/or CAM data) shall match the latest released drawing (and/or CAD presentation).

(2) List of materials on manufacturing instructions (and/or CAM data) shall match materials identified on the drawing (and/or CAD presentations).

(3) Nomenclature descriptions, part numbers and serial number markings called out on the drawing (and/or CAD presentation) shall be identified on the manufacturing instructions (and/or CAM data).

(4) Drawings (and/or CAD presentations) and associated manufacturing instructions (and/or CAM data) shall be reviewed to ascertain that all approved changes have been incorporated into the CI.

(5) Release records shall be checked to insure all drawings (and/or CAD presentations) reviewed are identified.

(6) The number of any drawings (and/or CAD presentations) containing more than five outstanding changes attached to the drawing shall be recorded.

(7) The drawings (and/or CAD presentations) of a major assembly/black box of the HWCI shall be checked for continuity from top drawing down to piece-part drawing.

(8) Insure that approvals by the Government are present where required.

d. The Program Parts Selection List (PPSL) shall be compared to the HWCI/engineering drawing package to ensure only approved parts are listed. (See MIL-STD-965)

e. Review of all records of baseline configuration for the CI by direct comparison with the contractor's engineering release system and change control procedures to verify that the configuration being produced accurately reflects released engineering data. This includes interim releases of spares/repair parts provisioned prior to PCA to ensure delivery of currently configured spares/repair parts.

f. Audit the software library, or similar internal support activity, to assure that it accurately identifies, controls, and tracks changes to the software and documentation. Audit the contractor's engineering release and change control system against the requirements in Appendix B to ascertain that the system is adequate to properly control the processing and formal release of engineering changes. The contractor's system shall meet the information and capabilities requirements of Appendix B as a minimum. The contractor's formats, systems, and procedures will be used.

# g. CI acceptance test data and procedures shall comply with product specifications. The PCA team shall determine any acceptance tests to be reaccomplished, and reserves the right to have representatives of the Government witness all or any portion of the required audits, inspections, or tests.

h. CIs which fail to pass acceptance testing shall be repaired if necessary and shall be retested by the contractor either in the manner specified by the PCA team leader or in accordance with procedures in the product specification.

i. Present data confirming the inspection and test of subcontractor equipment end items at point of manufacture. Inspection and tests shall have been witnessed by a Government representative.

j. The PCA team shall review the prepared back-up data (all initial documentation which accompanies the CI) for correct types and quantities to ensure adequate coverage at the time of shipment to the user.

k. CIs which have demonstrated compliance with the product specification will be approved for acceptance. The PCA team shall certify by signature that the CI has been built in accordance with the drawings and specifications.

l. As a minimum, the following actions shall be performed by the PCA team on each CSCI being audited:

(1) Review all documents which will comprise the product specification for format and completeness.

(2) Review FCA minutes for recorded discrepancies and actions taken.

(3) Review the design descriptions for proper entries, symbols, labels, tags, references, and data descriptions.

(4) Compare detailed design descriptions with the software listings for accuracy and completeness.

(5) Examine actual CSCI delivery media (disks, tapes, etc.) to ensure conformance with Section 5 of the software requirements specifications.

(6) Review the annotated listings for compliance with approved coding standards.

(7) Review all required operation and support documents for completeness, correctness, incorporation of comments made at Test Readiness Review (TRR), and adequacy to operate and support the CSCI(s). (Formal verification or acceptance of these manuals should be withheld until system testing to ensure that the procedural contents are correct.)

(8) Examine the related documentation to ensure that the relationship of the CSCI to the parts, components or assemblies that store the executable forms of the CSCI is properly described. For firmware, ensure that the information completely describes the requirements for installation of the CSCI into the programmable parts or assemblies and that this information describes the requirements for verification that the installation has been properly implemented. Where follow-on acquisition of the firmware items is intended, ensure that the documentation has been accomplished to the level of detail necessary for the intended reprocurement.

(9) Demonstrate, using deliverable or Government owned support software, that each CSCI can be regenerated. The regenerated CSCI shall be compared to the actual CSCI delivery media to insure they are identical.

5.6.3.4 Post-audit actions.

a. The contractor will be notified in writing by the Government of acceptance or rejection of the PCA, of PCA status and discrepancies to be corrected, or rejection of the PCA and requirements for reaccomplishment.

b. After completion of the PCA, the contractor shall publish and distribute copies of PCA minutes as specified in the contract. The results of the PPSL review will be included in the final PCA minutes.

c. Accomplish residual tasks for which they were identified as the responsible activity.

5.6.3.5 PCA Certifications. A sample PCA certification package is shown in Figures 7a - 7k. When specified in the contract, a Configuration Audit Summary Report, consisting of the applicable information of the certification package shall be required. (See 6.3)

PCA CERTIFICATION PACKAGE

CI IDENTIFIER: _____

CONTRACT NO. _____

PRIME CONTRACTOR:

_____

_____

_____

EQUIPMENT MANUFACTURERS:

_____

_____

_____

APPROVED BY (Designee) _____
(CONTRACTOR)

APPROVED BY (Designee) _____
(GOVERNMENT)

DATE _____

DATE _____

Figure 7a. Sample PCA Certification Package

PCA CERTIFICATION SHEET NO. 2

(For Equipment/Computer Software)

Contract: _____ Date: _____

Contractor: _____

_____

Specification Review and Validation. Specifications have been reviewed and validated to assure that they adequately define the configuration item and the necessary testing, mobility/transportability and packaging requirements.

Check One

☐ The Product Specifications are complete and adequately define the configuration item. They shall, therefore, constitute the product baseline. See attachment ___ for comments.

☐ The Product Specifications are unacceptable. See attachment ___ for a list of discrepancies.

Signature(s) of PCA Team Member(s)

** _____ _____

* _____ _____

_____ _____

_____ _____

** Team Chairperson * Sub-Team Chairperson

A. Specification Review and Validation Instructions. The detailed specifications listed in paragraph B. below shall be reviewed for compliance with the applicable requirements. Each specification shall serve as the basic document for configuration control of the subject configuration items. The information contained within the specifications shall be audited at the PCA.

B. Review and Validation Results.

1. Specifications reviewed and validated:

| SPEC NO. | PART NO. | DATE | EQUIPMENT/COMPUTER SOFTWARE NOMENCLATURE |
|---|---|---|---|

2. Specifications Reviewed and Disapproved:
(Provide attachment for causes.)

| SPEC NO. | PART NO. | DATE | EQUIPMENT/COMPUTER SOFTWARE NOMENCLATURE |
|---|---|---|---|

FIGURE 7d. PCA Certification Package - Continued

PCA CERTIFICATION SHEET NO. 3

(Equipment)

Contract: _____ Date: _____

Contractor: _____

_____

Drawing Review. Drawings have been compared with the equipment to ensure that the latest drawing change letter has been incorporated into the equipment, that part numbers agree with the drawings, and that the drawings are complete and accurately describe the equipment.

Check One

☐ The drawings are complete and accurately describe the equipment. See attachment ___ for comments.

☐ The drawings are compatible with the applicable contract Program Parts Selection List (PPSL).

☐ Attachment ___ is a list of discrepancies.

Signature(s) of PCA Team Member(s)

* _____ _____

_____ _____

_____ _____

_____ _____

_____ _____

* Sub-Team Chairperson

A. Drawing Review Results. The following drawings were reviewed by the PCA drawing review sub-teams:

| DOCUMENT NUMBER | DOCUMENT TITLE |
|---|---|

Figure 7e. Sample PCA Certification Package - Continued

# 6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use.

6.2 Tailoring guidance for contractual application. The requirements of this standard must be tailored for application to programs involving items of various levels of complexity in various phases of their life cycle. Table II is provided to help you decide which requirements from sections 4 and 5 should be invoked in your contract. Table III is provided to help you decide which status accounting tasks, from Appendix H, should be
# invoked in your contract. These tables list numbered paragraphs
# and subparagraphs only. Lettered subparagraphs are considered an
# integral part of the numbered paragraph or subparagraph to which
# they are attached, and they are invoked with the numbered
# paragraph or subparagraph automatically, unless specifically
# stated otherwise in the tasking statement in the Statement of
# Work. Where the subparagraphs listed in the tables are normally invoked as a unit by citing the lead paragraph, the subparagraphs are listed, but no tailoring guidance is provided for the individual subparagraphs; when certain subparagraphs will need to be tailored out, or when they may be separately tailored into, the contract, separate tailoring guidance is provided for those specific subparagraphs.

6.2.1 Use of Table II. The columns are arranged to identify the normal application in the Demonstration and Validation (D/V), the Engineering and Manufacturing Development (EMD), the Production and Deployment (PRD), and the Operation and Support (OPS) phases of the life cycle. The SMPL (sample wording) column provides a recommendation on which of the sample tasking wording to use (by reference to samples A, B, or C in 6.2.1.2) and, if applicable, to the blank spaces (e.g., [1] or [2]) in the sample. The NOTE column contains a "pointer" to a specific Note (see 6.2.1.3) that will provide further guidance in tailoring the requirement.

6.2.1.1 Explanation of codes. A number of codes are used in Table II to indicate the applicability of a specific requirement to a specific phase of the program. The following codes are used:

a. N/A - This code is used to designate "title-only" paragraphs that would not normally be invoked to incorporate all subparagraphs into the contract.

Table II. Tailoring guide for use with MIL-STD-973

| | PARA # | PARAGRAPH TITLE | D/V | EMD | PRD | OPS | NOTE | SMPL |
|---|---|---|---|---|---|---|---|---|
| # | 4 | GENERAL REQUIREMENTS | ALL | ALL | ALL | ALL | a | B(1) |
| # | 4.1 | Basic Requirements | ALL | ALL | ALL | ALL | | |
| # | 4.2 | Planning | ALL | ALL | ALL | ALL | | |
| # | 4.3 | Computer-aided acq and logistics support (CALS) | ALL | ALL | ALL | ALL | | |
| # | 4.3.1 | Data distribution/access | ALL | ALL | ALL | ALL | | |
| | 4.3.2 | Electronic transfer of data | MOST | MOST | MOST | MOST | b | B(3) |
| | 4.3.3 | Interactive access to digital data | OPT | OPT | OPT | OPT | b | B(3) |
| # | 4.4 | Config identification | ALL | ALL | ALL | ALL | | |
| # | 4.5 | Configuration control | ALL | ALL | ALL | ALL | | |
| # | 4.6 | Configuration status acctg | ALL | ALL | ALL | ALL | | |
| | 4.7 | Configuration audits | NO | ALL | OPT | OPT | c | B(3) |
| | 5 | DETAILED REQUIREMENTS | N/A | N/A | N/A | N/A | | |
| | 5.1 | Purpose | N/A | N/A | N/A | N/A | | |
| | 5.2 | Config mgt administration | N/A | N/A | N/A | | | |
| | 5.2.1 | Contractor's CM Plan Invokes APPENDIX A] | MOST | MOST | OPT | | d | C(1) C(2) |
| | 5.2.2 | Work breakdown structure | MOST | MOST | MOST | | | C(1) |
| | 5.2.3 | Technical reviews | ALL | ALL | NO | | | C(1) |
| | 5.3 | Config identification | N/A | N/A | N/A | N/A | | |
| | 5.3.1 | Purpose of config identif | ALL | ALL | ALL | | | C(1) |
| | 5.3.2 | Configuration item selection | ALL | ALL | OPT | | | C(1) |
| | 5.3.3 | Developmental configuration | ALL | ALL | OPT | OPT | e | B(1) |
| # | 5.3.3.1 | Documentation library | ALL | ALL | OPT | OPT | | |
| # | 5.3.3.2 | Drawing library | MOST | MOST | OPT | OPT | f | B(3) |
| # | 5.3.3.3 | Software Devel Library (SDL) | MOST | MOST | OPT | OPT | f | B(3) |
| | 5.3.4 | Configuration Baselines | ALL | ALL | OPT | OPT | | C(1) |
| | 5.3.4.1 | Configuration Baseline/config documentation | ALL | ALL | ALL | | | B(1) |
| | 5.3.4.1.1 | Funct Config Documentation | ALL | ALL | OPT | | g | B(3) |
| | 5.3.4.1.2 | Alloc Config Documentation | FEW | ALL | OPT | | h | B(3) |
| | 5.3.4.1.3 | Product Config Documentation | NO | OPT | ALL | | i | B(3) |
| # | 5.3.4.2 | Maint of config documentation | MOST | MOST | MOST | OPT | j | B(3) |
| | 5.3.5 | Egrg release and correlation of manufactured products [Invokes APPENDIX B] | FEW | ALL | ALL | ALL | | C(1) C(2) |
| | 5.3.5.1 | Specification release/appvl | ALL | ALL | ALL | | | C(1) |
| | 5.3.5.2 | Reqts for Engrg Rel Records | FEW | OPT | OPT | OPT | k | A(1) |
| # | 5.3.5.2.1 | Use of Engrg Rel Records [Invokes APPENDIX C] | FEW | OPT | OPT | OPT | | A(2) |
| # | 5.3.5.2.2 | Initial release | FEW | OPT | OPT | OPT | | |
| # | 5.3.5.2.3 | Change release | FEW | OPT | OPT | OPT | | |
| # | 5.3.5.2.4 | Consolidation of multiple chgs into a single ERR | FEW | OPT | OPT | OPT | | |

Table II. Tailoring guide for use with MIL-STD-973 - Continued

| PARA # | PARAGRAPH TITLE | D/V | EMD | PRD | OPS | NOTE | SMPL |
|---|---|---|---|---|---|---|---|
| 5.3.6 | Configuration identifiers | ALL | ALL | ALL | | l | B(1) |
| 5.3.6.1 | CAGE code | ALL | ALL | ALL | | | |
| 5.3.6.2 | Govt type desig/nomenclature | ALL | ALL | ALL | | | |
| 5.3.6.3 | Document numbers | ALL | ALL | ALL | | | |
| 5.3.6.4 | Part/item identif numbers | MOST | MOST | MOST | | f | B(3) |
| 5.3.6.5 | Software identifiers | MOST | MOST | MOST | | f | B(3) |
| 5.3.6.6 | Serial/lot numbers | FEW | ALL | ALL | ALL | m | |
| 5.3.6.6.1 | Government serial numbers | FEW | OPT | OPT | OPT | n | B(3) |
| 5.3.6.6.2 | Reuse of serial numbers | FEW | ALL | ALL | ALL | m | |
| 5.3.6.7 | Product identif/marking | FEW | MOST | MOST | | o,f | B(3) |
| 5.3.6.7.1 | Software marking/labeling | NO | MOST | MOST | | f | B(3) |
| 5.3.6.7.2 | Firmware labeling | NO | MOST | MOST | | f | B(3) |
| 5.3.6.7.3 | NDI, COTS, and PDI labeling | NO | OPT | OPT | OPT | l | B(3) |
| 5.3.7 | Interface management | N/A | N/A | N/A | | | |
| # 5.3.7.1 | Interface requirements | ALL | ALL | OPT | | p | C(1) |
| 5.3.7.2 | Rqts for an ICWG | FEW | OPT | OPT | | q | B(1) |
| 5.3.7.2.1 | ICWG membership | FEW | OPT | OPT | | q | |
| 5.3.7.2.2 | ICWG chairmanship | SLCT | SLCT | SLCT | | q | B(3) |
| 5.4 | Configuration control | N/A | N/A | N/A | N/A | | |
| 5.4.1 | Purpose of config control | ALL | ALL | ALL | ALL | | C(1) |
| 5.4.2 | Reqts for Engineering Changes | ALL | ALL | ALL | ALL | z | |
| 5.4.2.1 | The engrg change process | ALL | ALL | ALL | ALL | | C(1) |
| 5.4.2.2 | Administrative requirements | ALL | ALL | ALL | ALL | | B(1) |
| 5.4.2.2.1 | Classification of engrg chgs | ALL | ALL | ALL | ALL | | |
| 5.4.2.2.2 | Classifying engrg chg to PDI | FEW | OPT | OPT | OPT | r | B(3) |
| 5.4.2.2.3 | Content of ECPs | ALL | ALL | ALL | ALL | | B(2) |
| | Invokes APPX D] | | | | | | |
| 5.4.2.2.3.1 | Unrelated engrg changes | ALL | ALL | ALL | ALL | | |
| 5.4.2.2.3.2 | Revisions of ECPs | ALL | ALL | ALL | ALL | af | B(3) |
| 5.4.2.2.3.3 | Supporting data | ALL | ALL | ALL | ALL | | |
| 5.4.2.2.3.4 | Classified data | ALL | ALL | ALL | ALL | | |
| 5.4.2.3 | Class I engrg chg proposals | ALL | ALL | ALL | ALL | | B(1) |
| 5.4.2.3.1 | Class I ECP decisions | N/A | N/A | N/A | N/A | | |
| 5.4.2.3.1.1 | Tgt for tech decis-Cls I ECP | ALL | ALL | ALL | ALL | | |
| 5.4.2.3.1.2 | ECP authorization | ALL | ALL | ALL | ALL | | |
| 5.4.2.3.1.3 | Cls I compat engrg chgs | ALL | ALL | ALL | ALL | | |
| 5.4.2.3.1.4 | Disapproval of ECPs | ALL | ALL | ALL | ALL | | |
| 5.4.2.3.2 | Class I ECP justif codes | ALL | ALL | ALL | ALL | | |

Table II. Tailoring guide for use with MIL-STD-973 - Continued

| PARA # | PARAGRAPH TITLE | D/V | EMD | PRD | OPS | NOTE | SMPL |
|---|---|---|---|---|---|---|---|
| 5.4.2.3.3 | Class I ECP types | ALL | ALL | ALL | ALL | | |
| 5.4.2.3.3.1 | Preliminary change proposal | ALL | ALL | ALL | ALL | | |
| 5.4.2.3.3.1.1 | Use of prelim ECPs (Type P) | ALL | ALL | ALL | ALL | s | B(3) |
| 5.4.2.3.3.1.2 | Use of Adv Chg Study Notice | OPT | OPT | OPT | OPT | s | B(3) |
| 5.4.2.3.3.2 | Use of formal ECP (Type F) | ALL | ALL | ALL | ALL | | |
| 5.4.2.3.4 | Class I engrg chg priorities | ALL | ALL | ALL | ALL | | |
| 5.4.2.3.4.1 | Exped Cls I ECPs w/priority of emergency or urgent | ALL | ALL | ALL | ALL | | |
| 5.4.2.3.5 | Format for Cls I engrg chgs | ALL | ALL | ALL | ALL | | |
| 5.4.2.3.5.1 | Class I engrg chgs during concept explor, dem/val | ALL | NO | NO | NO | | B(3) |
| 5.4.2.3.5.2 | Class I engrg chgs during Engrg and Mfg Devel (EMD) | NO | ALL | NO | NO | | B(3) |
| 5.4.2.3.5.3 | Class I engrg chgs during production and support | NO | NO | ALL | ALL | | B(3) |
| 5.4.2.3.6 | Related engineering changes | ALL | ALL | ALL | ALL | | |
| 5.4.2.3.6.1 | Rel engrg chgs-single prime | NO | ALL | ALL | ALL | | B(3) |
| 5.4.2.3.6.2 | Rel engrg chgs-single prime-multi procuring activities | OPT | OPT | OPT | OPT | t | B(3) |
| 5.4.2.3.6.3 | Rel egrg chgs-separate primes | OPT | OPT | OPT | OPT | t | B(3) |
| 5.4.2.3.6.4 | Same egrg chg-prime/sub coord | OPT | OPT | OPT | OPT | t | B(3) |
| 5.4.2.3.6.5 | Same egrg chg-sev contractors | OPT | OPT | OPT | OPT | t | B(3) |
| 5.4.2.4 | Class II engineering changes | NO | FEW | ALL | ALL | u | B(1) |
| 5.4.2.4.1 | Class II engrg chg format | NO | FEW | ALL | ALL | | |
| 5.4.2.4.2 | Class II justification codes | NO | FEW | ALL | ALL | | |
| 5.4.2.4.3 | Concurrence in Class II chgs | NO | SLCT | SLCT | SLCT | u | B(3) |
| 54.2.4.4 | Approval of Class II chgs | NO | SLCT | SLCT | SLCT | u | B(3) |
| 5.4.2.4.5 | Non-custody of original dwgs | NO | NO | OPT | OPT | v | B(3) |
| # 5.4.3 | Requirements for Requests for Deviation (RFDs) | NO | FEW | ALL | ALL | w,z | A(1) |
| 5.4.3.1 | Restrictions on deviations | | | | | | |
| 5.4.3.2 | Recurring deviations | | | | | | |
| 5.4.3.3 | Classification of deviations | | | | | | |
| 5.4.3.3.1 | Minor | | | | | | |
| 5.4.3.3.2 | Major | | | | | | |
| 5.4.3.3.3 | Critical | | | | | | |
| 5.4.3.4 | Format [Invokes APPENDIX E] | | | | | | A(2) |
| 5.4.3.5 | Disposition of deviations | | | | | | |
| 5.4.3.5.1 | Minor deviations | | | | | | |
| 5.4.3.5.2 | Critical and major deviations | | | | | | |

Table II. Tailoring guide for use with MIL-STD-973 - Continued

| PARA # | PARAGRAPH TITLE | D/V | EMD | PRD | OPS | NOTE | SMPL |
|---|---|---|---|---|---|---|---|
| 5.4.4 | Requirements for Requests for Waiver (RFWs) | NO | NO | ALL | ALL | x,z | A(1) |
| 5.4.4.1 | Restrictions on waivers | | | | | | |
| 5.4.4.2 | Recurring waivers | | | | | | |
| 5.4.4.3 | Classification of waivers | | | | | | |
| 5.4.4.3.1 | Minor | | | | | | |
| 5.4.4.3.2 | Major | | | | | | |
| 5.4.4.3.3 | Critical | | | | | | |
| 5.4.4.4 | Format [Invokes APPENDIX E] | | | | | | A(2) |
| 5.4.4.5 | Disposition of waivers | | | | | | |
| 5.4.4.5.1 | Minor waivers | | | | | | |
| 5.4.4.5.2 | Critical and major waivers | | | | | | |
| 5.4.5 | Parts substitutions | NO | NO | ALL | ALL | z | C(1) |
| 5.4.6 | Rqts for Spec Change Notices (SCNs) [Invokes APPX F] | ALL | ALL | ALL | ALL | z | A(1) A(2) |
| 5.4.6.1 | SCN cover page | | | | | | |
| 5.4.6.2 | Attachments to proposed SCN | | | | | | |
| 5.4.6.3 | Supercession | | | | | | |
| 5.4.6.4 | Approved SCN | | | | | | |
| 5.4.6.5 | Changed pages | | | | | | |
| 5.4.7 | Rqts for Notices of Revision (NORs) [Invokes APPX G] | NO | NO | OPT | OPT | y,z | C(1) C(2) |
| 5.4.8 | Config ctrl (Short-fm Proced) | NO | NO | OPT | OPT | z | A(1) |
| 5.4.8.1 | Purpose | | | | | | |
| # 5.4.8.2 | Requirements for ECPs | NO | NO | OPT | OPT | z | |
| 5.4.8.2.1 | ECP format [Invokes APPENDIX D] | | | | | | A(2) |
| 5.4.8.2.2 | Expediting ECPs | | | | | | |
| 5.4.8.2.3 | Revisions | | | | | | |
| 5.4.8.2.4 | ECP coverage | | | | | | |
| 5.4.8.2.5 | ECP supporting data | | | | | | |
| 5.4.8.2.6 | ECP approval | | | | | | |
| 5.4.8.2.7 | Disapproval | | | | | | |
| # 5.4.8.3 | Requirements for deviations | NO | NO | OPT | OPT | z | |
| 5.4.8.3.1 | Restrictions on deviations | | | | | | |
| 5.4.8.3.2 | Recurring deviations | | | | | | |
| 5.4.8.3.3 | Deviation format [Invokes APPENDIX E] | | | | | | A(2) |
| 5.4.8.3.4 | Deviation significant factors | | | | | | |
| 5.4.8.3.5 | Deviation review and approval | | | | | | |

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| PARA # | PARAGRAPH TITLE | D/V | EMD | PRD | OPS | NOTE | SMPL |
|---|---|---|---|---|---|---|---|
| # 5.4.8.4 | Requirements for waivers | NO | NO | OPT | OPT | z | |
| 5.4.8.4.1 | Restrictions on waivers | | | | | | |
| 5.4.8.4.2 | Recurring waivers | | | | | | |
| 5.4.8.4.3 | Waiver format | | | | | | |
| | [Invokes APPENDIX E] | | | | | | A(2) |
| 5.4.8.4.4 | Waiver significant factors | | | | | | |
| 5.4.8.4.5 | Waiver review and approval | | | | | | |
| 5.5 | Config Status Acctg (CSA) | OPT | ALL | ALL | ALL | aa | B(1) |
| # 5.5.1 | Purpose of CSA | OPT | ALL | ALL | ALL | aa | |
| 5.5.2 | CSA requirements | OPT | ALL | ALL | ALL | aa | |
| | [Invokes APPENDIX H] | | | | | | B(2) |
| 5.5.3 | Preferred information system | OPT | ALL | ALL | ALL | | |
| 5.5.4 | Retention of histor data base | ALL | ALL | ALL | ALL | | |
| 5.5.5 | CSA data elements | OPT | ALL | ALL | ALL | | |
| | [Invokes APPENDIX I] | | | | | | B(2) |
| 5.5.6 | Contractor focal point | ALL | ALL | ALL | ALL | | |
| 5.5.7 | CSA analysis requirements | FEW | FEW | OPT | OPT | ab | B(3) |
| 5.5.8 | Reporting accomp of retro chgs | NO | NO | OPT | OPT | ac | B(3) |
| | [Invokes APPENDIX J] | | | | | | B(2) |
| 5.6 | Configuration audits | N/A | N/A | N/A | N/A | | |
| 5.6.1 | Contractor partic/respons | NO | ALL | ALL | OPT | | A(1) |
| 5.6.1.1 | Subcontractors and suppliers | | | | | | |
| 5.6.1.2 | Location | | | | | | |
| 5.6.1.3 | Contractor reqts | | | | | | |
| 5.6.1.4 | Government participation | | | | | | |
| 5.6.2 | Functional Conf Audit (FCA) | NO | ALL | NO | NO | ad | A(1) |
| 5.6.2.1 | Contract reqts | | | | | | |
| 5.6.2.2 | Contractor responsibility | | | | | | |
| 5.6.2.3 | Verif procedures and rqts | | | | | | |
| 5.6.2.4 | Post-audit actions | | | | | | |
| 5.6.2.5 | FCA Certification Package | | | | | | |
| 5.6.3 | Physical Config Audit (PCA) | NO | OPT | OPT | OPT | ae | A(1) |
| 5.6.3.1 | Contract reqts | | | | | | |
| 5.6.3.2 | Contractor responsibility | | | | | | |
| 5.6.3.3 | PCA procedures and rqts | | | | | | |
| 5.6.3.4 | Post-audit actions | | | | | | |
| 5.6.3.5 | PCA Certification Package | | | | | | |

b. ALL - This code indicates that the requirement is almost always invoked for this phase, with the understanding that there may be a few exceptions.

c. NO - This code indicates that the requirement is almost never invoked for this phase, with the understanding that there may be a few exceptions.

d. MOST - This code indicates that most programs would invoke this requirement in their contract for this phase.

e. OPT - This code indicates that this is an optional requirement for this phase. Based on the notes provided, you will have to determine whether to invoke it in your contract.

f. FEW - This code indicates that this is an optional requirement for this phase but that only a few programs may want to utilize it. (Usually this relates to a requirement that is normally invoked in a later phase of the program.)

g. SLCT - This code indicates that this requirement is one of a group of "either/or" requirements that must be selected if the lead paragraph is invoked for that phase; normally, only one of the group should be selected.

6.2.1.2 Sample wording for contractual tasking.

6.2.1.2.1 Invoking a complete set of requirements. The requirements of the standard are arranged so that, in large part, they can be invoked by reference to a lead paragraph; all subparagraphs of that lead paragraph are then applied to the contract. If an Appendix other than Appendix H (CSA) is invoked within the paragraph, it is intended that the entire Appendix be invoked, and the task should include that wording.

SAMPLE A: The contractor shall __(e.g., process requests for deviation from the current approved configuration documentation)__ in accordance with MIL-STD-973, paragraph __[1] (e.g., 5.4.3)__ and subparagraphs, [NOTE: if an Appendix is invoked by the paragraph, include] and Appendix __[2] (e.g., E )__.

6.2.1.2.2 Tailoring out specific requirements. Some of the requirements of this standard are provided for use in specific circumstances; one (or more) of the subparagraphs will have to be tailored out even though all of the other subparagraphs under the lead paragraph still apply.

SAMPLE B: The contractor shall __(e.g., document Class II engineering changes)__ in accordance with MIL-STD-973, paragraph __[1] (e.g., 5.4.2.4)__ and subparagraphs, [NOTE: if an Appendix is invoked by the paragraph include] and
# Appendix __[2] (e.g., D)__, except that subparagraph(s) __[3] (e.g., 5.4.2.4.4)__ and __[3]__ does not apply.

6.2.1.2.3 Identifying specific applicable requirements. Other requirements in this standard are intended to be invoked by themselves as we select specific parts of a general CM tasking for a particular program. If an Appendix other than Appendix H (CSA) is invoked within the paragraph, it is intended that the entire Appendix be invoked, and the task should include that wording.

SAMPLE C: The contractor shall __(e.g., manage the interfaces of the items being developed)__ in accordance with MIL-STD-973, paragraph(s) __[1] (e.g., 5.3.7.1)__ and __[1]__ [NOTE: if an Appendix is invoked by the paragraph, include] and Appendix __[2]__.

6.2.1.3 Specific tailoring notes. The following specific tailoring information is provided to supplement the guidance provided in Table II. [NOTE: The number in parentheses at the beginning of each note is the number of the primary paragraph(s) to which it applies.]

a. (4) The General Requirements of a standard are normally invoked on all contracts without tailoring. In this standard, the only exceptions are for the electronic transfer of data (4.3.2), for the interactive access to digital data (4.3.3), and for the audits (4.7). You will have to decide whether to tailor them out for your program.

b. (4.3.2 and 4.3.3) While the use of electronic submittal of data will become nearly universal, some programs may not want to use the capabilities; this will be especially true in the next few years while this technology is maturing. The requirement for the capability to interactively access the contractor's data base will be applied only to selected programs where such access to "real-time" data is necessary to

successfully manage the program. A primary criterion will be the size of the contractor and the availability of a data base in the contractor's organization to provide the needed information. For a small contractor, on a small program, who does not have such a capability, this requirement could vastly increase the contract cost.

c. (4.7) This paragraph would be invoked on every contract which invokes the detailed FCA (5.6.2) or PCA (5.6.3) tasks of this standard. (See also 6.2.1.3.ad and ae.)

d. (5.2.1) CM Plans are usually required as a part of the first phase of the program, with updates provided at least with the transition to the next phase of the development. The CM Plan may be used as a guidance document, or it may be invoked (by referencing the number, revision, and date) as a contractually binding requirement, based on the preference of the program.

e. (5.3.3) The developmental configuration terminology has been expanded to include both developmental hardware and software. During Demonstration/Validation and EMD phases, we want the contractor to internally control the developmental documentation once it has been released and prior to its being baselined by the government. Once into the Production phase, such control is still required for changes the contractor is developing; so this requirement might continue to be invoked.

f. (5.3.3.2/5.3.3.3; 5.3.6.4/5.3.6.5; 5.3.6.7/5.3.6.7.1/ 5.3.6.7.2) Most contracts will invoke these paragraphs, since they will involve the development and production of both hardware and software. When a contract involves strictly one or the other, only the appropriate paragraph(s) should be invoked. Also, when it is desired that the contractor use Government-issued drawing numbers and/or part numbers, that requirement should be cited.

g. (5.3.4.1.1) Many major systems will require the identification of the FCD in the Concept Exploration phase and the baselining of the FCD in the Demonstration/Validation phase. On smaller programs which start with EMD phase, this requirement should be

invoked in that contract; for major systems, the requirement for compliance with the FCD should be continued during the EMD phase. Once production phase is reached, many programs rely only on the PCD for definition of their requirements for the items they are buying. Others (mainly larger systems) continue to invoke the FCD as the overall requirement for the capabilities of all of the items they are buying, especially for correction of deficiencies determinations.

h. (5.3.4.1.2) Most programs which include a Demonstration/Validation phase will include the requirement to generate the draft ACD during that phase; the ABL will be established as a part of the EMD tasking. Once the Production phase is reached, many programs rely only on the PCD for definition of their requirements for the items they are buying. Others continue to invoke the ACD as the overall requirement for the capabilities of the particular item they are buying, especially for correction of deficiencies; if that is the case, MIL-STD-490 (program-unique) specifications for the ACD and PCD should be ordered as "two-part" specifications.

i. (5.3.4.1.3) Most programs will require the identification of the PCD during the EMD phase. Programs including software may require the establishment of the PBL for the software during the EMD phase. Programs which plan to compete the production contract for the item(s) being developed should require the establishment of the PBL as a part of the EMD effort. All other programs will normally establish the PBL as a part of the Production phase effort.

j. (5.3.4.1.4) Most programs will require the contractor to maintain the original copies of the configuration documentation during the Demonstration/Validation and EMD phases. Many programs continue with contractor maintenance of the originals throughout the production phase, too; some transfer control of the originals to the program office. In the Operation and Support phase, the documentation is usually maintained by the managing DOD service.

# k. (5.3.5.2) Once the government has taken control of the originals of the configuration documentation, it may require that the activity implementing the ECP update the originals and release them using a specific form called an Engineering Release Record (ERR).

l. (5.3.6, 5.3.6.7.3) Most contracts should invoke this lead paragraph to incorporate the entire section of requirements on configuration identifiers. However, the paragraph on NDI/COTS/PDI numbering should be tailored out unless it is appropriate.

m. (5.3.6.6., 5.3.6.6.2) The requirements for the contractor to plan for (and sometimes start) issuing serial numbers is usually invoked for the EMD phase. The continuing requirement for the issue of the serial numbers is usually invoked in the production contract(s).

n. (5.3.6.6.1) For some specialized types of equipment, the Government issues the serial numbers to be affixed to the deliverable units. If such equipment is a part of your program, this requirement must be invoked specifically for the equipment involved. Also, if a follow-on production or spares buy is awarded to a contractor other than the original design activity, it may be advantageous to invoke this requirement if you want the serial numbers for the delivered units to continue in an unbroken string even though the CAGE changes.

o. (5.3.6.7) Product marking is most critical during the production and support phases to make sure that the deliverable units are adequately identified. However, this task will normally be invoked in the EMD phase to require the contractor to establish the procedures and evaluate the medium to be used to accomplish this marking.

p. (5.3.7.1) Once programs reach the Production phase, control of interfaces below the ACD level is provided through control of the detail design invoked in the product baseline and the PCD. If a detail design is not invoked for production, then this requirement is needed.

q. (5.3.7.2) The Interface Control Working Group (ICWG) is required primarily when the Government has awarded several contracts to different contractors for the development of different pieces of a system. It may

also be utilized where several different DOD agencies services must meet regularly with one or more contractors developing the system. If an ICWG is needed, then the contractor's role as either a member or as the chair/member must be identified. If contractor is to be a member, invoke 5.3.7.2 and tailor out 5.3.7.2.2; if contractor is to be the ICWG chair and a member, invoke 5.3.7.2 using Sample A.

r. (5.4.2.2.2) If privately-developed items (NDI, COTS, PDI) are not involved in the program, this requirement should not be invoked.

s. (5.4.2.3.3.1.1 and 5.4.2.3.3.1.2) When the program wants to obtain brief preliminary information about routine Class I engineering changes, the contract must specifically cite the use of either the preliminary ECP or the ACSN for this purpose, not both. If the ACSN is invoked, only subparagraph "c" under the preliminary ECP requirement should be invoked to cover its use for Emergency and Urgent ECPs.

# t. (5.4.2.3.6.3 - 5.4.2.3.6.5) These tasks are normally not required during the Demonstration/Validation phase since the allocated baselines would not be established until the end of this phase or the beginning of the EMD phase; thus, there would be no related ECPs. These tasks would only be invoked, along with the requirement for the "related changes for a single prime", when the situation cited exists. You will have to evaluate your acquisition strategy to determine whether they will apply.

u. (5.4.2.4/5.4.2.4.3/5.4.2.4.4) Since Class II engineering changes apply only to the product baseline, this set of paragraphs is applicable primarily in the production phase and beyond. If product baselines will be established as a part of the EMD phase, then this task would be invoked for use once the PBL(s) is established. The contract must specify that either "concurrence" or "approval" of the Class II changes applies by citing the appropriate subparagraph.

v. (5.4.2.4.5) If the contractor will not have control of the originals of the "drawings", this requirement should be invoked to define the requirement for Government approval of the Class II changes.

w. (5.4.3) This set of paragraphs on Requests for Deviation is most commonly invoked during the production phase, and beyond, on production and spares contracts. Deviations may also be applicable to the EMD phase, however, when it will be necessary to accept early test prototypes that will not fully comply with the performance requirements of the FCD and/or ACD.

x. (5.4.4) This set of paragraphs on Requests for Waiver is most commonly invoked during the production phase and beyond in production and spares contracts. Waivers normally do not apply to the EMD phase.

y. (5.4.7) Notices of revision normally apply when the activity proposing an engineering change does not control the originals of the documentation affected. It is normally used only for changes to drawings (the SCN is now authorized for use whether the ECP originator controls the original or not). The need for NORs occurs almost exclusively in the production phase and beyond; even then it is applicable to only a few contracts outside of the Army, which normally takes control of the document originals at the end of the EMD phase. [In situations where the originals of the specifications affected by an ECP are not controlled by the ECP originator, the Army may require NORs for the specifications in lieu of the SCNs.] When the program requires draft NORs to be submitted with the ECP, the contract task should specify that NORs are required only for those drawings/documents directly affected by the proposed change.

z. (5.4.8) The Short-form procedure for ECPs, deviations, and waivers is normally invoked as a complete package. The procedure is used almost exclusively when the producing contractor is not the activity that designed the item and cannot be expected to know the complete logistics impact of a change. This happens only in the production phase and beyond. This requirement is used in place of the requirements (see 5.4.2) for a complete ECP (set of -1692 forms), deviation (see 5.4.3), and waiver (see 5.4.4). Requirements for SCNs (see 5.4.6) and for NORs (see 5.4.7) may also be invoked, when required.

aa. (5.5.2) The status accounting information available in the demonstration/validation phase is limited; most programs would track the needed information internally rather than requiring the contractor to do it. In

later phases, the contractor would be required to provide increasing amounts of the information for government use. NOTE: By invoking this requirement, Appendix H is also invoked; you MUST tailor that Appendix, using Table III as a guide, to identify the specific types of information your program will require from the contractor.

# ab. (5.5.7) If you want the contractor personnel to accomplish the task of monitoring the information system, and of notifying you when problems arise with the items or changes reflected in the information system, this task should be invoked. Normally, Government personnel accomplish this task.

# ac. (5.5.8) Retrofit involves delivered production units, so the tasking only applies to the production (and later) phase. As ECPs are submitted which involve retrofit of parts by contractor personnel, this task should be added to the contract as a part of the ECP. If a new contract is to be awarded solely for the development of a modification to an existing system, and if the new parts will be installed by the contractor, then this requirement should be invoked in that contract so that the CSA and maintenance records for the delivered units can be updated.

ad. (5.6.2) The FCAs for each CI (and for the system, if applicable) are normally required as a part of the EMD contract. They should be accomplished prior to, or concurrent with, the accomplishment of the PCA for the same CI.

ae. (5.6.3) The PCAs for CSCIs are usually required as a part of the EMD phase contract, although they are often delayed until after some, or all, of the integration (into system hardware) testing has been completed. For hardware, however, the EMD phase units are usually "pre-production prototypes", so the PCA task for hardware items is normally invoked in the first production contract when the development contractor has been preselected (usually in the acquisition strategy) to be the production contractor; the PCA can then be accomplished on an actual production unit. If the production program is to be competed, PCAs would be required in the EMD contract (to establish a product baseline for the competition) and in the first production contract (to update the approved product configuration documentation to match the final

production design). It is possible that PCAs would be invoked in a later production contract, but that is usually necessary only when there has been a "shutdown" of the production line for a significant length of time or when a new contractor has won the competition for a (share of a) production contract.

af. (5.4.2.2.3.2b) If paragraph 4.3.2 is contractually invoked, an ECP would be submitted as a digital data file, and subsequent revisions to an ECP would be submitted as updated versions of that data file (i.e., each revision would be a resubmittal of the complete data file in accordance with 4.3.2). However, when paragraph 4.3.2 is not contractually invoked, and when submittal of changed pages only is not desired, this paragraph must be specifically tailored out in the contract.

6.2.2 Use of Table III. Most of the Appendices in this standard are intended to be invoked as a complete package. The requirements in Appendix H are the only ones that require tailoring; Table III has been included to provide guidance on the applicability of the various paragraphs and Tasks in Appendix H to a particular phase of a program. The columns are arranged to identify the normal application in the Demonstration/Validation, the Engineering and Manufacturing Development, the Production, and the Operation and Support phases of the life cycle. Paragraph 6.2.2.2 provides some sample wording to be used in invoking these Tasks on a contract while paragraph 6.2.2.3 provides some brief guidance on the application of the various paragraphs and the related Tasks on contracts.

6.2.2.1 Explanation of codes. Tasks designated with a number of the format "X0X" (e.g., 201) are normally considered to be "minimum" information system requirements; Tasks designated with a number of the format "X1X" are normally considered to be "optional" requirements. Table III cites the applicability of both "minimum" and "optional" tasks. A number of words are used in Table III to designate the activity (i.e., buying, contractor, either of these, or the support activity) normally held responsible for the Task information elements during each phase

Table III. APPLICATION OF CSA TASKS

| LIFE CYCLE PHASE | | DEMONSTRATION & VALIDATION | ENGINEERING & MANUFACTURING DEVELOPMENT | PRODUCTION & DEPLOYMENT | OPERATIONS & SUPPORT |
|---|---|---|---|---|---|
| BASELINE(S) NORMALLY IN EFFECT | | FUNCTIONAL BASELINE | FUNCTIONAL/ ALLOCATED BASELINE | FUNCTIONAL/ ALLOCATED/ PRODUCT BASELINE | FUNCTIONAL/ ALLOCATED/ PRODUCT BASELINE |
| TASK 101 | Specification Revision Level | REQUIRED CONTRACTOR | REQUIRED CONTRACTOR | REQUIRED CONTRACTOR | REQUIRED SUPPORT ACTIVITY |
| TASK 102 | Specification Revision History | REQUIRED CONTRACTOR | REQUIRED CONTRACTOR | REQUIRED CONTRACTOR | REQUIRED SUPPORT ACTIVITY |
| TASK 103 | Drawing Revision Level | NOT APPLICABLE | NOT APPLICABLE | REQUIRED CONTRACTOR | REQUIRED SUPPORT ACTIVITY |
| TASK 104 | Drawing Revision History | NOT APPLICABLE | NOT APPLICABLE | REQUIRED CONTRACTOR | REQUIRED SUPPORT ACTIVITY |
| TASK 105 | Software Version Level | NOT APPLICABLE | NOT APPLICABLE | REQUIRED CONTRACTOR | REQUIRED SUPPORT ACTIVITY |
| TASK 106 | Software Version History | NOT APPLICABLE | NOT APPLICABLE | REQUIRED CONTRACTOR | REQUIRED SUPPORT ACTIVITY |
| TASK 107 | Indentured Listing | NOT APPLICABLE | NOT APPLICABLE | REQUIRED CONTRACTOR | REQUIRED SUPPORT ACTIVITY |
| TASK 111 | Program Contracts | RECOMMENDED BUYING ACTIVITY | RECOMMENDED BUYING ACTIVITY | RECOMMENDED BUYING ACTIVITY | RECOMMENDED SUPPORT ACTIVITY |
| TASK 201 | Changes in Process | REQUIRED BUYING ACTIVITY | REQUIRED BUYING ACTIVITY | REQUIRED BUYING ACTIVITY | REQUIRED SUPPORT ACTIVITY |
| TASK 202 | Change History | RECOMMENDED BUYING ACTIVITY | RECOMMENDED BUYING ACTIVITY | RECOMMENDED BUYING ACTIVITY | RECOMMENDED SUPPORT ACTIVITY |
| TASK 211 | Change Event Date | NOT RECOMMENDED BUYING ACTIVITY | RECOMMENDED BUYING ACTIVITY | RECOMMENDED BUYING ACTIVITY | OPTIONAL SUPPORT ACTIVITY |
| TASK 212 | Change Event History | NOT RECOMMENDED BUYING ACTIVITY | RECOMMENDED BUYING ACTIVITY | RECOMMENDED BUYING ACTIVITY | OPTIONAL SUPPORT ACTIVITY |
| TASK 213 | Date Search | NOT RECOMMENDED BUYING ACTIVITY | RECOMMENDED BUYING ACTIVITY | RECOMMENDED BUYING ACTIVITY | OPTIONAL SUPPORT ACTIVITY |
| TASK 301 | Approved Changes | REQUIRED EITHER BUYING ACTIVITY OR CONTRACTOR | REQUIRED EITHER BUYING ACTIVITY OR CONTRACTOR | REQUIRED EITHER BUYING ACTIVITY OR CONTRACTOR | REQUIRED SUPPORT ACTIVITY |
| TASK 401 | Approved Change Implement | RECOMMENDED BUYING ACTIVITY | RECOMMENDED CONTRACTOR | REQUIRED CONTRACTOR | REQUIRED SUPPORT ACTIVITY |
| TASK 411 | Specification | OPTIONAL BUYING ACTIVITY | OPTIONAL CONTRACTOR | OPTIONAL CONTRACTOR | OPTIONAL SUPPORT ACTIVITY |
| TASK 412 | Drawing | NOT APPLICABLE | NOT APPLICABLE | OPTIONAL CONTRACTOR | OPTIONAL SUPPORT ACTIVITY |
| TASK 413 | Software | NOT APPLICABLE | NOT APPLICABLE | OPTIONAL CONTRACTOR | OPTIONAL SUPPORT ACTIVITY |
| TASK 414 | Technical Manual | NOT APPLICABLE | NOT APPLICABLE | OPTIONAL CONTRACTOR | OPTIONAL SUPPORT ACTIVITY |
| TASK 415 | Spares Purchase | NOT APPLICABLE | NOT APPLICABLE | OPTIONAL CONTRACTOR | OPTIONAL SUPPORT ACTIVITY |
| TASK 416 | Support Equipment | NOT APPLICABLE | NOT APPLICABLE | OPTIONAL CONTRACTOR | OPTIONAL SUPPORT ACTIVITY |
| TASK 417 | Retrofit Kit Development | NOT APPLICABLE | NOT APPLICABLE | OPTIONAL CONTRACTOR | OPTIONAL SUPPORT ACTIVITY |
| TASK 501 | As-Built Record | NOT APPLICABLE | NOT APPLICABLE | REQUIRED CONTRACTOR | NOT APPLICABLE |
| TASK 502 | Maintenance History | NOT APPLICABLE | NOT APPLICABLE | REQUIRED SUPPORT ACTIVITY | REQUIRED SUPPORT ACTIVITY |
| TASK 503 | Retrofit History | NOT APPLICABLE | NOT APPLICABLE | REQUIRED SUPPORT ACTIVITY | REQUIRED SUPPORT ACTIVITY |
| TASK 601 | Audit Action Item Status | NOT APPLICABLE | REQUIRED BUYING ACTIVITY | REQUIRED BUYING ACTIVITY | AS APPROPRIATE BUYING ACTIVITY |
| TASK 602 | Audit Action Item History | NOT APPLICABLE | OPTIONAL BUYING ACTIVITY | OPTIONAL BUYING ACTIVITY | OPTIONAL BUYING ACTIVITY |

of the program. (NOTE: During Demonstration/Validation phase, the buying activity can usually handle the relatively simple information system; during the Operation phase, the support activity will normally have the total responsibility.) Other words are used to designate the applicability of the particular Task to this phase of the program, as follows:

a. required - these are considered the minimum acceptable capabilities of the information system, whether the information is obtained from the contractor or from a government activity.

b. recommended - these usually relate to information available as a result of some "minimum" Tasks in the early phases of the program and of some"optional" Tasks whose accomplishment provides enhanced management capabilities for many programs.

c. optional - normally, this is used for requirements which are excessive for most programs but which may be required for programs with critical readiness/ availability requirements and/or with very complex logistics support systems.

d. not recommended - normally, this is used for "optional" requirements which are excessive for the phase of the program or which are required only in later phases for programs with critical readiness/availability requirements and/or with very complex logistics support systems.

e. not appropriate - normally, this indicates that the related documents or items do not exist during this phase or are not yet controlled by the buying activity.

6.2.2.2 Sample wording for contractual tasking. Appendix H must be tailored; it cannot be completely invoked (nor should any program want to completely invoke it) in a contract merely by citing the Appendix. Each individual paragraph and/or numbered Task must be specifically cited to constitute a contractual requirement. If a particular requirement appears to be appropriate for the contract for this phase of the program, wording similar to the following sample can be used:

# SAMPLE D: The contractor shall (e.g., maintain updated
# information about approved engineering changes) fulfilling
# the requirements of MIL-STD-973, Appendix H, paragraph
# (e.g., H.5.1.3.1) and Tasks (e.g., 301) .

6.2.2.3 Specific tailoring notes. The following specific tailoring information is provided to supplement the guidance provided in Table III. [NOTE: The number in parentheses at the beginning of each note is the number of the primary paragraph(s) to which it applies.]

a. (H.5.1.1) Descriptive documentation and identification numbers. This paragraph and certain of the Tasks will be invoked on most contracts since the contractor usually has the most complete and timely access to the details of this information. The History Tasks (e.g., 102) should not be invoked without the basic Tasks (e.g., 101).

b. (H.5.1.2) Tracking active change processing. This paragraph is usually left out of contracts unless the Government wants to monitor the contractor's preparation of the change as well as the government processing of the change. The program office, or government managing activity, usually has the most complete and timely access to the details of the in-house processing information. The optional Tasks (i.e., 211 - 213) should be not invoked unless the basic Task 201 is invoked.

c. (H.5.1.3) Approved changes to CI/CSCI configuration. This paragraph may be invoked or deleted; both the contractor and the government have the ability to gather and control this information. However, the contractor's existing engineering release system will normally contain this information, so it may be easiest to obtain it from that source. This information will provide the capability to determine the expected configuration of each delivered production unit in the inventory.

d. (H.5.1.4) Implementation of approved changes. This paragraph and Task 401 will normally be invoked on most contracts since the contractor usually has the most complete and timely access to the details of this information. However, until the completion of the development program and the delivery of operational units and logistics support elements, only a few of the implementation events are applicable, so the buying activity may be able to track this information until the beginning of production. Once into the production phase, certain of the optional Tasks may also be invoked in conjunction with Task 401, but this information can be very expensive to obtain and

requires considerable manpower to monitor. These optional Tasks should be used selectively; they would be most useful in situations where lack of supportability for the system/item can have significant National Security impacts to the extent that such detailed information is necessary to minimize such supportability problems.

e. (H.5.1.5) Configuration of units in the field. This paragraph and Task 501 are normally invoked only for the Production phase contract. The government support activity usually has an existing information system which will provide the information required for Tasks 502 and 503. If so, it should be used from the start of the delivery of production units to simplify the transition from a contractor to a government information system when production is complete.

# f. (H.5.1.6) Tracking audit action items. This paragraph
# and Tasks 601 and 602 would not normally be invoked on
# contracts. The government buying activity normally has
# sufficient resources to provide adequate tracking
# capabilities and retention of historical information.

6.3 Data requirements. The following Data Item Descriptions (DID's) must be listed, as applicable, on the Contract Data Requirements List (DD Form 1423) when this standard is applied on a contract, in order to obtain the data, except where DOD FAR Supplement 27.475-1 exempts the requirement for a DD Form 1423.

| | Reference Paragraph | DID Number | DID Title |
|---|---|---|---|
| | 5.2.1 | DI-CMAN-80858A | Contractor's CM Plan |
| # | 5.3.2, 5.3.4 | DI-CMAN-81293 | Configuration Item Documentation Recommendation |
| # | 5.3.5.2.1 | DI-CMAN-80463A | Engineering Release Record |
| | 5.3.7.1 | DI-CMAN-81248 | Interface Control Drawing Documentation |
| # | 5.3.7.2.2 | DI-CMAN-81247A | Interface Control Management Data |
| | 5.4.2.3.3.1.2 | DI-CMAN-81246 | Advance Change Study Notice |
| # | 5.4.2.3.5 | DI-CMAN-80639A | Engineering Change Proposal |
| # | 5.4.3.4 | DI-CMAN-80640A | Request for Deviation |

| Reference Paragraph | DID Number | DID Title |
|---|---|---|
| #5.4.4.4 | DI-CMAN-80641A | Request for Waiver |
| 5.4.6 | DI-CMAN-80643A | Specification Change Notice |
| 5.4.7 | DI-CMAN-80642A | Notice of Revision |
| 5.5.5 | DI-CMAN-81253 | Configuration Status Accounting Information |
| 5.5.8 | DI-CMAN-81245 | Installation Completion Notification |
| 5.6.1.2 | DI-CMAN-80556A | Configuration Audit Plan |
| 5.6.1.2 | DI-ADMN-81249 | Conference Agenda |
| 5.6.1.2 | DI-ADMN-81250 | Conference Minutes |
| #5.6.2.5, # 5.6.3.5 | DI-CMAN-81022B | Configuration Audit Summary Report |

The above DID's are those cleared as of the date of this standard. The current issue of DOD 5010.12-L, Acquisition Management Systems and Data Requirements Control List (AMSDL) must be researched to ensure that only current, cleared DID's are cited on the DD Form 1423.

# 6.4 Supersession data. The following military standards #are cancelled by MIL-STD-973:

| | |
|---|---|
| MIL-STD-480 | Configuration Control - Engineering Changes, Deviations, and Waivers |
| MIL-STD-481 | Configuration Control - Short Form |
| MIL-STD-482 | Configuration Status Accounting Data Elements and Related Features |
| MIL-STD-483 | Configuration Management Practices |
| MIL-STD-1456 | Configuration Management Plan |
| MIL-STD-1521 | Technical Reviews and Audits for Systems, Equipments, and Computer Software (Appendixes G, H, and I only) |

#A paragraph-by-paragraph cross-reference guide for all the above #documents and for DOD-STD-2167 is provided in Appendix K for #information.

6.5 Subject term (key word) listing.

Advance change study notice
Baseline
Configuration audit
Configuration control
Configuration control board
Configuration documentation

Supersedes page 120 of 17 April 1992.

# ENGINEERING RELEASE RECORDS AND CORRELATION OF MANUFACTURED PRODUCTS

## B.1 GENERAL

B.1.1 Scope. This Appendix establishes the minimum requirements for achieving the proper relationship between engineering/manufacturing data and manufactured CIs. The requirements of this Appendix apply to the contractor's engineering release system pertaining to:

a. Elements of data required

b. Production release functional capabilities and procedures

c. Release of engineering changes

d. Field release functional capabilities and procedures.

This Appendix is a mandatory part of the standard. The information contained herein is intended for compliance.

B.1.2 Application. The requirements of this Appendix apply to all contracts requiring the preparation of engineering drawings and specifications for CIs and/or requiring the preparation of software documentation/code and specifications for CSCIs to the extent specified in the contract. The contractor shall be responsible to the Government for compliance by subcontractors, vendors, and suppliers.

## B.2 APPLICABLE DOCUMENTS

This section is not applicable to this Appendix.

## B.3 DEFINITIONS

B.3.1 Definitions used in this Appendix. For purposes of this Appendix, the definitions contained in Section 3 of this standard shall apply.

## B.4 GENERAL REQUIREMENTS

B.4.1 Documented procedures. The contractor shall have documented procedures for the initial release of engineering data describing the items being purchased by the Government and for

the subsequent control of that engineering data, including the #incorporation of engineering changes. The contractor shall ensure that the system is capable of:

a. Reconciling engineering work authorizations to changed contract requirements

b. Verifying that engineering documentation has been revised and released in accordance with changed contract requirements

c. Assuring that engineering changes have been accomplished and incorporated into deliverable units of the CIs as required by the released engineering documentation

B.4.2 Engineering release records. The contractor shall prepare and maintain engineering release records in accordance with contractor formats and procedures to fulfill at least the minimum requirements specified herein. Engineering release records shall be used to satisfy the requirements for traceability of deviations, waivers, and engineering changes. Only one release record shall be maintained for each drawing number.

B.5 DETAILED REQUIREMENTS

B.5.1 Data elements.

B.5.1.1 Elements of data required for hardware items. The contractor's engineering release records for hardware items shall contain the following information.

B.5.1.1.1 CI elements:

# a. CI identifier

b. Delivered CI serial numbers

c. Top assembly drawing number

d. CI specification identification number.

B.5.1.1.2 Drawing elements:

a. Drawing number

b. Drawing title

c. CAGE number

d. Number of sheets

e. Date of release

f. All released change letters

g. Date of each change letter release

h. Each effecting change document numbers.

B.5.1.1.3 Part number elements:

a. Controlling drawing number

b. Component part numbers released.

B.5.1.2 Elements of data required for software items. The contractor's engineering release records shall reference the CSCI Version Description Document (VDD) which contains all of the required data elements.

B.5.2 Production release functional capabilities. To the extent that the contractor has detail design responsibility, the contractor's release function and documentation, including drawings and associated lists, shall be capable of determining the following released engineering requirements:

a. The composition of any part at any level in terms of subordinate part numbers

b. All next higher part numbers (or next assembly numbers) in which the part is used

c. The composition of any CI in terms of component part numbers and subordinate CI identifiers

d. The composition of any CSCI in terms of components and units and subordinate CSCI numbers

e. The item part number and serial numbers, if serialized, on which any subordinate provisioned or to be provisioned part is used

# f. The CI identifier and CI serial numbers (effectivity) on which any subordinate provisioned or to be provisioned part is used

g. Identification numbers of class I changes which have been released for any specific serial-numbered unit of a CI

h. Identification numbers of all class II changes which have been partially or completely released for any particular part, including week of incorporation

# i. The CI identifiers and CI serial numbers, or CSCI version numbers, which constitute effectivity of each class I engineering change

j. The military specification, or military standard, part numbers or nomenclature of all standard parts used as a component of any nonstandard part

k. The subcontractor, vendor, or supplier part numbers for all such parts used in the contractor's deliverable units

l. The contractor specification document, specification control drawing numbers, or source control drawing numbers associated with any subcontractor, vendor, or supplier part number.

B.5.3 Release of engineering changes. The contractor's release function shall verify the approval/concurrence status of each Class I/Class II change prior to the release of the related documentation for use in the generation of deliverable units. The release function documentation shall be capable of identifying engineering changes, and of retaining the record of superseded configuration requirements, affecting CIs which have been formally accepted by the Government.

B.5.3.1 All approved Class I and II engineering changes released for production shall be identified by identification numbers. The change shall be documented and released prior to formal acceptance of the deliverable unit where the engineering change is first installed.

C.5.2 Block 2. Date. Entry will not be made in Block 2 until completion of Block 13 (Approved by) is accomplished by an authorized official. The date of the completion of Block 13 will then be entered in Block 2 in six numeric characters; year, month, day, each separated by a hyphen (-), e.g., "91-02-06".

C.5.3 Block 3. Procuring Activity Number. To be used by Government for entry of internal processing number, if desired.

# C.5.4 Block 4. DODAAC. Enter the DODAAC of the procuring agency.

C.5.5 Block 5. Baseline Established or Changed. Check appropriate block to identify the configuration baseline established or changed.

C.5.6 Block 6. Type of Release. Check appropriate block to indicate whether release is establishing a baseline (initial) or a change to the established configuration baseline.

C.5.7 Block 7. Enter the ECP number and the date approved on the lines provided, when applicable.

C.5.8 Block 8. Functional Assembly Nomenclature. Enter part number and functional assembly nomenclature of the lowest functional assembly to which the entire ERR applies.

C.5.9 Block 9. System or Configuration Item Nomenclature and Part Number. Enter the system or configuration item nomenclature and part number.

C.5.10 Block 10. Remarks or Miscellaneous. Enter the identification numbers of additional ECPS, when applicable. This block can also be used to note the item which the documentation identifies, e.g., system specification, minor item, configuration item, critical component, partial or complete releases, or any other remarks pertinent to the data being released.

C.5.11 Block 11. Data Released or Revised. Enter each document and sheet as a separate line entry. EXCEPTION: Multi-sheet documents will be entered as a single line entry when all sheets are maintained at the same revision level.

C.5.11.1 Block 11a. CAGE Code. Enter the CAGE Code of the document listed in Block 11c conforming to Cataloging Handbook H4/H8.

C.5.11.2 Block 11b. Type. Enter document type code (commonly used acronym as shown in the following examples):

| CODE | DOCUMENT TITLE (EXAMPLES) |
|---|---|
| Blank | Drawings |
| SQ | Quality Assurance Provisions |
| IL | Index List (MIL-STD-100) |
| EL | List of Inspection Equipment |
| DL | Data List (MIL-STD-100) |
| PL | Parts List (MIL-STD-100) |
| PS | Special Packaging Instructions |
| ED | List of Equipment - Depot Installed |
| EM | List of Equipment - Manufacturer Installed |
| ET | List of Equipment - Troop Installed |
| B-5 | Development Specification |
| C-5 | Product Specification |
| CPTPR | Computer Program Test Procedure (DOD-STD-1679A) |
| CPTS | Computer Program Test Specification |
| DBDD | Data Base Design Document |
| FSM | Firmware Support Manual |
| IDS | Interface Design Specification (DOD-STD-1679A) |
| IRS | Interface Requirements Specification |
| LCUG | Life Cycle Software Support Environment User's Guide |
| PDD | Preliminary Description Document (DOD-STD-1679) |
| PDS | Program Design Specification |
| PPD | Program Package Document |
| PPS | Program Performance Specification (DOD-STD-1679) |
| SPS | Software Product Specification |
| SRS | Software Requirements Specification |
| SS | System Specification |
| STD | Software Test Description |
| STPR | Software Test Procedure (DOD-STD-2167) |
| TEMP | Test and Evaluation Master Plan (DOD 5000.2) |
| VDD | Version Description Document |

C.5.11.3 Block 11c. Number. Enter documents in a logical order by types of documents in ascending numerical and alpha-numerical sequence. Group drawings by size.

C.5.11.4 Block 11d. Page of. Enter the particular page number of the total count of pages in Column 11e. No entry required for single page documents.

# INSTRUCTIONS FOR THE PREPARATION OF AN ECP UTILIZING DD FORMS 1692 THROUGH 1692-7

## D.1 GENERAL

D.1.1 Scope. This Appendix establishes uniform requirements for the preparation of DD Forms 1692 through 1692/6, Engineering Change Proposal , Pages 1-7. This Appendix is a mandatory part of the standard. The information contained herein is intended for compliance.

D.1.2 Application. The provisions of this Appendix apply to all ECP preparing activities and to proposed engineering changes for systems, CIs, HWCIs, and CSCIs.

## D.2 APPLICABLE DOCUMENTS

This section is not applicable to this Appendix.

## D.3 DEFINITIONS

D.3.1 Definitions used in this Appendix. For purposes of this Appendix, the definitions contained in Section 3 of this standard shall apply.

## D.4 GENERAL REQUIREMENTS

D.4.1 Use of the ECP forms. DD Forms 1692 through 1692/6 (See Figures 9a - 9g) shall be used for the submission and processing of all class I engineering changes. When ECP Short Form procedures are specified, only DD Form 1692 (Page 1), with applicable enclosures is required. Supplemental page(s) may be used with the ECP forms as necessary.

D.4.2 Supporting data. In addition to the information required by this Appendix, the ECP package shall include supporting data. (See 5.4.3.10)

D.4.3 Local reproduction. Local reproduction of DD Forms 1692-1692/6 is authorized.

D.4.4 Distribution statement. The appropriate distribution markings shall be affixed to the ECP package in accordance with the requirements of the contract. (See MIL-STD-1806)

D.5 DETAILED REQUIREMENTS. Detailed instruction for completion of the DD Forms 1692 through 1692/6.

D.5.1 DD Form 1692, "Engineering Change Proposal, Page 1". (See Figure 9a).

D.5.1.1 Block 1. Date. Enter the submittal date of the ECP #or of the revision to the ECP.

D.5.1.2 Block 2. Procuring activity number. To be used by Government for entry of internal processing number, if desired.

D.5.1.3 Block 3. DODAAC. Enter the DODAAC of the procuring activity.

D.5.1.4 Block 4. Originator name and address. Enter the name and address of the contractor or Government activity, #submitting the ECP. Use Block 4a for the contractor or #Government activity name (inclusion of submitting individual's #name is optional). Use Block 4b for the contractor or Government #activity address.

D.5.1.5 Block 5. Class of ECP. Enter I or II for the applicable ECP as defined in 5.4.2.2.1 or 5.4.2.4. When ECP short form procedure is specified by the contract, the Government representative shall assign the change classification.

D.5.1.6 Block 6. Justification code. Enter the justification code, as defined by 5.4.2.3.2, which is applicable to the proposed Class I engineering change. When short form procedure is specified in the contract, the Government representative will assign the appropriate justification code for other than VECPs.

CODES

B - Interface
C - Compatibility
D - Deficiency
O - Operational or logistics support
P - Production stoppage
R - Cost Reduction
S - Safety
V - Value engineering

D.5.1.6.1 Value engineering ECP. When the contract contains a value engineering clause, each value engineering ECP shall be identified both by the "V" in Block 6 and by the entry of the following notation at the top of Page 1 of the ECP form: "VALUE ENGINEERING CHANGE PURSUANT TO CONTRACT CLAUSE."

D.5.1.7 Block 7. Priority. The contractor shall recommend a priority to the Government and enter an "E", "U", or "R" (Emergency, Urgent or Routine) as defined in 5.4.2.3.4. When short form procedure is specified by contract, the Government # representative will assign the priority.

D.5.1.8 Block 8. ECP designation.

D.5.1.8.1 Block 8a. Model/Type. Enter model or type designation of the CI for which this proposal is being filled out. For CSCIs, enter the CSCI identification number.

D.5.1.8.2 Block 8b. CAGE code. Enter the CAGE code as shown in Defense Logistic Agency (DLA) Cataloging Handbook H4/H8 for the activity originating the ECP.

D.5.1.8.3 Block 8c. System designation. The system or top-level CI designation or nomenclature assigned by the Government shall be entered, if known.

D.5.1.8.4 Block 8d. ECP number. Once an ECP number is assigned to the first submission of a change proposal, that number shall be retained for all subsequent submissions of that change proposal. One of the following methods of assigning ECP numbers may be used unless otherwise stated in the contract:

a. ECP numbers shall run consecutively commencing with number 1, for each CAGE Code identified activity, or ECP numbers may be assigned in a separate series for each system that the contractor is producing.

b. When an ECP is split into a basic ECP and related ECPs, the basic ECP shall be identified with the number prescribed above and each related ECP shall be identified by the basic number plus a separate dash number. The number of characters in the ECP number, dash number, type, and revision identification shall not exceed 15.

c. Other systems may be used provided the ECP number is unique for any CAGE Code identified activity, and the 15 character limitation in paragraph (2) above is not exceeded.

D.5.1.8.5 Block 8e. Type. Enter either a "P" for preliminary, or "F" for formal. (See 5.4.2.3.3)

D.5.1.8.6 Block 8f. Revision. If an ECP is being revised, enter the proper identification of the revision, i.e., R1 for the first revision; R.. for subsequent revisions. (The date #submitted shall be the date of the revised ECP.) (See D.5.1.1)

D.5.1.9 Block 9. Baseline affected. Place an "X" in the box(es) according to the baseline(s) affected.

D.5.1.10 Block 10. Other systems/configuration items affected. Enter an "X" in the "yes" or "no" box, as applicable, to indicate whether there is an effect on other systems or CIs which will require the submittal of related Class I ECPs. Supply details in Blocks 28 and 30.

D.5.1.11 Block 11. Specifications affected. If specifications cited in the contract are affected by the ECP, their identity by the CAGE code of the design activity, document number, revision letter, and the SCN (or NOR) number of the SCN (or NOR) being submitted with the ECP, shall be entered.

D.5.1.12 Block 12. Drawings affected. Enter the indicated information for all drawings affected by the ECP. The CAGE code to be entered is that of the design activity whose number is assigned to the listed drawing(s). If more than three drawings are affected, enter the information required in the first line for the top-level drawing affected by the ECP and make direct reference on the second line to the enclosure and paragraph containing the list of all the affected drawings.

D.5.1.13 Block 13. Title of change. Enter a brief title to identify the component or system affected by the ECP. Do not include the purpose or description which are to be entered in Block 16. For example: F-18 Aircraft Air Turbine Start Connector Backshell Replacement; AN/AYK-14(v) CP-1502/CP-1503 Reconfiguration to CP-1799; (CSCI name) Block Update.

D.5.1.14 Block 14. Contract number(s) and line item(s). Enter the number(s) of all currently active contract(s), and the affected contract line item number(s), at the originating CAGE-coded activity that are affected by the engineering change. If more contracts are affected than can be fit in the block, make reference to the enclosure and paragraph where this information is provided. In the case of a Government-prepared change, the task number under which the ECP will be funded and implemented shall be provided in this block.

D.5.1.22 Block 22. Effect on production delivery schedule. State the estimated delivery schedule of items incorporating the change, either in terms of days after contractual approval, or by specific dates contingent upon contractual approval by a specified date. If there will be no effect on the delivery schedule, so state. For a complex ECP, or for related ECPs, this delivery date will be repeated on the milestone chart together with the schedule for other interrelated actions.

D.5.1.23 Block 23. Retrofit.

D.5.1.23.1 Block 23a. Recommended item effectivity. When the contractor recommends that the engineering change be accomplished in accepted items by retrofit (see Block 43), the quantities and serial (or lot) numbers of accepted items in which the change will be incorporated by retrofit shall be entered in Block 23a, or in a referenced enclosure. Such statement regarding items currently in production shall be based upon the estimated approval date of the ECP.

D.5.1.23.2 Block 23b. Ship/vehicle class affected. When the delivered CI is installed in one or more ship/vehicle classes, enter the identification of such classes. Not applicable when ECP Short Form procedure is specified by contract.

D.5.1.23.3 Block 23c. Estimated kit delivery schedule. State estimated kit delivery schedule by quantity and date. When special tooling for retrofit is required for Government use, reference an enclosure in Block 23b on which is specified the dates of availability of tools, jigs, and test equipment required in conjunction with the kits to accomplish the change.

D.5.1.23.4 Block 23d. Locations or ship/vehicle numbers affected. State the location(s) at which retrofit is to be accomplished. If retrofit is to be accomplished in ships (or in vehicles for which the serial numbers are not shown in Block 23), enter the ship hull numbers (or vehicle numbers). Not applicable when ECP Short Form procedure is specified by contract.

D.5.1.23.5 For CSCI's, this block shall apply if the change is part of a hardware or equipment change and implementation of the CSCI change is per a hardware retrofit schedule, or the fielded version of the software is to be replaced. If the CSCI

change is part of a larger hardware or equipment change and incorporation of the CSCI change is per a hardware retrofit schedule, that information will be included here either directly or by reference.

D.5.1.24 Block 24. Estimated costs/savings under contract. Enter the total estimated costs/savings impact of the ECP on the contract for the subject CI. This Figure normally will be the same as that in column 5, line e, of DD Form 1692/3 (Page 4). (Savings shall be shown in parentheses.)

D.5.1.25 Block 25. Estimated net total costs/savings. Enter the total estimated costs/savings impact of the basic and all related ECPs, including other costs/savings to the Government. This Figure normally will be the same as that in column 6 the bottom line of Page 4 or, if there are related ECPs, in column 4, line e, of Page 5. Not applicable when ECP Short Form procedures are specified by contract.

D.5.1.26 Block 26. Submitting activity authorized signature. An authorized official of the activity entered in Block 1 shall sign this block and provide title in Block 26b. This indicates the ECP has the official sanction of the submitting activity.

D.5.1.27 Block 27. Approval/disapproval. This block is for use by the Government. [Note: The Contract Administration Office will review all engineering changes. It will recommend approval or disapproval of Class I ECPs by marking Block 27a and completing Block 27d. It will concur or non-concur in the classification of Class II engineering changes by marking Block 27c accordingly and by completing Block 27d, 27e and 27f. When the Government requires approval of Class II engineering changes prior to contractor implementation, the designated approval activity will mark Block 27b accordingly and will #complete Blocks 27d, e, and f. For Class I ECPs, the Government contracting officer will mark Block 27g accordingly and will complete Block 27h, 27i and 27j.

D.5.2 DD Form 1692/1, "Engineering Change Proposal, Page 2", Effects on Functional/Allocated Configuration Identification. DD Form 1692/1 (See Figure 9b) is to be completed only if the proposed change affects the system specification or the item development specification(s). If a separate product function specification is used, effects on such specification of changes proposed after the PBL has been

D.5.3.9 Block 44. Work-hours per unit to install retrofit kits. Complete Blocks 44a through 44d to show the amount of work which must be programmed for various activities to install retrofit kits. Estimate work-hours to install retrofit kits when weapon system is undergoing overhaul.

D.5.3.10 Block 45. Work-hours to conduct system tests after retrofit. Enter the work-hours required to test the system or the item following installation of the retrofit kit.

D.5.3.11 Block 46. This change must be accomplished. Where previously approved engineering changes must be incorporated in a specific order in relation to the proposed change, such order should be specified.

D.5.3.12 Block 47. Is contractor field service engineering required? Check applicable box. If "yes" attach proposed program for contractor participation.

D.5.3.13 Block 48. Out of service time. Estimate the total time period from removal of the equipment from operational service until equipment will be returned to operational status after being retrofitted.

D.5.3.14 Block 49. Effect of this ECP and previously approved ECPs on item. The contractor shall summarize the cumulative effect upon performance, weight, electrical load, etc., of this ECP and previously approved ECPs when design limitations are being approached or exceeded. Consequences of ECP disapproval may be stated in this block or in a referenced enclosure.

D.5.3.15 Block 50. Date contractual authority needed. The contractor shall provide the date by which contractual authority to proceed is needed to maintain the estimated effectiveness specified in the ECP and to provide concurrent ILS and logistics support item deliveries. The contractor should consider the targets for decision (see 5.4.2.3.1.1) allowing additional time for review, mailing, and other incidental handling and processing requirements.

D.5.4 DD Form 1692/3, "Engineering Change Proposal, Page 4", Estimated net total cost impact. DD Form 1692/3 (See Figure 9d) is intended as the summary of the estimated net total cost/savings impact of a single ECP. In Blocks 51a through d, each cost factor associated with the ECP shall be considered as to whether such cost or portion thereof under the subject

contract is recurring or nonrecurring. Enter cost savings in #columns (a) and (d) as applicable, using entries in the "unit" and "quantity" columns when appropriate. Savings shall be enclosed with parentheses. Other costs/savings to the Government resulting from approval of this ECP shall be entered in column #(f) to the extent these costs can be determined by the contractor. This estimate of cost impact will be used for planning purposes and for a cost reduction or VE ECP analysis as to the net saving that would result. Firm cost proposals shall be submitted on standard form (SF) 1411, together with the appropriate cost breakdown. If an ECP affects items being delivered to more than one service, a separate DD Form 1692/3 (Page 4) shall be filled out for the quantities to be delivered to each service. Unless otherwise prescribed, costs of special tooling, scrap, redesign, etc. shall be divided between the using services on the basis of the percent of items furnished to each. The cost analysis applicable to each service shall be appropriately labeled at the top of the form.

D.5.4.1 ECP number. Enter the same ECP number as in Block 8d of DD Form 1692 (Page 1). If the number is assigned by system, include system designation.

D.5.4.2 Block 51. Estimated Costs/Savings Summary, Related ECPs.

D.5.4.2.1 Block 51a. Production costs/savings. Enter the estimate of costs/savings applicable to production of the CI resulting from incorporation of the change. Show redesign costs for the CI in the block titled "engineering, engineering data revisions" when the item is in production. Enter the projected life cycle costs/savings applicable to the planned production and spares buys of the item that are not yet on contract on the #CONFIGURATION ITEM/CSCI line in column (f). Enter the subtotal of production costs (both nonrecurring and recurring) in the fifth column.

D.5.4.2.2 Block 51b. Retrofit costs. Enter the estimate of costs applicable to retrofit of the item, including installation and testing costs. When Government personnel accomplish, or are involved in, the installation and/or testing #activities, the estimated costs shall be entered in column (f) on the affected lines. Show design costs of the retrofit kit and data revision costs strictly related to retrofit when the CI is in production; show all redesign and data revision costs when the item is not in production. Costs of modifications required to existing GFE and subsequent testing also shall be shown. Enter

the subtotal of retrofit costs in the fifth column. If some or all of the retrofit activities and costs will have to be deferred and placed on contract at a future date, show that deferred portion of the cost applicable to each line of Block 51b in
# column (f).

D.5.4.2.3 Block 51c. Integrated logistic support costs/savings. Enter the estimated cost of the various elements of ILS applicable to the item covered by the ECP. On the line titled "interim support," estimated costs shall be entered based upon the period of time between initial installation/operation of the item (aircraft, tank, etc.) as modified by the ECP and Government attainment of support capability. Such "interim support" costs shall include costs estimates of contractor recommended/provided spares and repair parts, special support equipment, training equipment and personnel training program. On the line titled "maintenance manpower" shall be entered the estimated costs/savings for the contracted maintenance support for the remainder of existing maintenance contracts. Other ILS costs/savings associated with ILS elements for which appropriate titles do not appear in Block 51c may be entered in place of a factor not used unless such costs are covered on DD Form 1692/4 (Page 5) or in related ECPs. Enter the subtotal of ILS costs/savings in column
# (e). Enter the operation and support portion of the life cycle
# cost/savings on the subtotal line in column (f).

D.5.4.2.4 Block 51d. Other costs/savings. If there are other costs under the contract which do not fall under the production, retrofit or ILS headings, enter the total of such
# costs in Block 51d, column (e). If there are other costs to the Government which do not fall under the production, retrofit or ILS headings or under Block 51g, "coordination changes by Government, enter the total of such costs in Block 51d, column
# (f).

D.5.4.2.5 Block 51e. Subtotal costs/savings. Enter the
# subtotals of columns (a), (d), (e), and (f) on this line. The
# subtotal in column (e) shall be the sum of columns (a) and (d). This subtotal under the contract then shall be entered on the
# line so titled in column (f) and on DD Form 1692 (Page 1), Block 24.

D.5.4.2.6 Block 51f. Coordination of changes with other contractors. This term applies to interface changes to items other than GFE, and changes to GFE being covered under 51b. If such coordination changes are covered by related ECPs and summarized on DD Form 1692/4 (Page 5), the estimated costs thereof shall not be entered in Block 51f. However, if Page 5 is not required, or if costs of certain coordination changes are not

tabulated on Page 5, an estimate of such costs shall be entered in Block 51f, when available.

D.5.4.2.7 Block 51g. Coordination changes by Government. Enter in this block an estimate of the cost to the Government of interface changes which must be accomplished in delivered items (aircraft, ships, facilities, etc.) to the extent such costs are not covered in Block 51b or on DD Form 1692/4 (Page 5).

D.5.4.2.8 Block 51h. Estimated net total costs/savings. #Enter the sum of all cost savings on column (f) and on DD Form 1692 (Page 1), Block 25.

D.5.5 DD Form 1692/4, "Engineering Change Proposal, Page 5", Estimated costs/savings summary, related ECPs. DD Form 1692/4 (See Figure 9e), is intended as the summary of the estimated net total cost impact of both the package of related ECPs and other associated new requirements which are needed to support the modified items. A few revised requirements for ILS, such as ILS plans and maintenance concepts do not appear as headings on DD Form 1692/3 (Page 4). When only a single ECP is involved, these additional costs for revision of ILS plans, etc. should be shown on Page 4 under the ILS heading, and Page 5 may be omitted.

a. Responsibility for preparation:

(1) Prime contractor. The prime contractor shall summarize the costs/savings of all related ECPs for which the contractor is responsible, on DD Form 1692/4 (Page 5). If there is no system integrating contractor, the prime contractor submitting the basic ECP shall include the costs of related ECPs being submitted by other affected contractors to the extent such information is available.

(2) System integrating contractor. When a system integrating contractor (or coordinating contractor) has contractual responsibility for ECP coordination, the contractor shall summarize the costs of related ECPs of the several primes involved in an interface or interrelated ECP on DD Form 1692/4 (Page 5) and shall attach this page to the ECP package.

b. Summarization techniques. The costs of certain related ECPs are entirely ILS costs. Thus costs of ECPs for trainers, other training equipment and SE shall be listed in total under the "ILS costs" heading. Other ECPs (applicable to weapons, aircraft, tanks, subsystems thereof, etc.) shall be split into the four subtotals of "production," "retrofit," "ILS," and "other costs" for entry on the DD Form 1692/4 (Page 5). The sum of the four subtotals attributed on Page 5, column (c), to an individual ECP should agree with the subtotal of costs/savings under contract, line e, column (e) of DD Form 1692/3 (Page 4) of that ECP. Cost breakdowns should be arranged in such manner that costs/savings are neither included more than once on the summary nor omitted. The purpose of the grouping on the cost summary is to arrive at a total ILS cost, and a net total cost of all actions for the complete group of related ECPs. If more related ECPs will have to be summarized than there is room available in the blocks on the form, the summarization of each cost area shall be accomplished on a separate enclosure and the total for that cost area entered on the subtotal line for that area on the DD Form 1692/4.

c. Software changes only. This form shall not apply in the case where all related ECPs being summarized refer to software changes only. However, a separate page(s) shall be provided with the ECP detailing the summary of the individual CSCI costs/savings for each of the related ECPs, grouped by the cost areas, and providing the total costs/savings for all of the related software ECPs.

D.5.5.1 ECP number. Enter the same ECP number as in Block 8d of DD Form 1692 (Page 1). If the number is assigned by system, include system designation.

D.5.5.2 Block 52a. Production costs/savings. Enter the ECP number in column (b). Enter the production subtotals from columns (e) and (f) of Block 51a of each ECP applicable to weapons, aircraft, tanks, subsystems thereof, etc. in columns (c) and (d) respectively. (Note that total costs of ECPs on trainers, training equipment, and SE are entered in Block 52c.)

D.5.5.3 Block 52b. Retrofit costs. Retrofit costs may be charged by the Government to production funds or maintenance funds or may be split between the two. The type of funds used depends upon the phase in the item's life cycle. If the practice

of the Government in this regard is known to the originator of Page 5, retrofit costs shall be entered in, or split between, Blocks 52b and 52.c.1, as appropriate. If such practice is unknown, enter in Block 52b the ECP number and the retrofit #subtotals from the columns (e) and (f) of Block 51b for each applicable ECP.

D.5.5.4 Block 52c. ILS costs/savings. Enter retrofit costs in Block 52.c.1, if appropriate. Enter in Block 52.c.2 the #ILS subtotals from columns (e) and (f) of Block 51c of each ECP applicable to weapons, aircraft, tanks, subsystems thereof, etc. As stated in D.5.4.4, enter costs of ECPs for ILS items in Blocks 52.c.3, 4, 5 and 6. Enter costs of revision or preparation of ILS plans and LSA records for the CI or complete system in Block 52.c.7. Enter in Block 52.c.9 costs of revision of the interim support plan to the extent such costs have not already been covered under Block 51c of DD Form 1692/3 (Page 4) of the applicable ECPs. Enter in Blocks 52.c.10 through 52.c.18 the costs of all new requirements for ILS not covered by ECPs, such costs being broken down into nonrecurring and recurring #costs, as appropriate, and totalled in column (c).

D.5.5.5 Block 52d. Other costs/savings. Enter in #Block 52d the sum of the "other costs" totals from column (e) and #(f) of Block 51d of each ECP applicable to weapons aircraft, tanks, subsystems thereof, etc. Enter the subtotals of columns #(c) and (d) on this line. The subtotal under contract(s) shall #then be entered on the line so titled in column (d).

D.5.5.6 Block 52e. Estimated net total costs/savings. Enter the sum of the preceding two lines of column (d).

D.5.6 DD Form 1692/5 "Engineering Change Proposal (Hardware) Page 6". See 5.4.18.8 for information as to when DD Form 1692/5 (See Figure 9f) is required. (An equivalent format may be substituted, when appropriate.) For software-only ECPs, the DD Form 1692/6 (Page 7), shall be used instead to summarize the detailed software events schedule. If the ECP impacts both software and hardware, both Pages 6 and 7 shall be used, as appropriate.

D.5.6.1 ECP number. Enter the same ECP number as in Block 8d of DD Form 1692 (Page 1). If the number is assigned by system, include system designation.

D.5.6.2 Block 53. CAGE code. Enter the CAGE code for the activity originating the ECP.

E.5 DETAILED REQUIREMENTS. Detailed instructions for completion of the DD Form 1694.

E.5.1 Block 1. Date. Enter the submittal date.

E.5.2 Block 2. Procuring activity number. To be used by Government for entry of internal processing number if desired.

E.5.3 Block 3. DODAAC. Enter the DODAAC of the procuring activity.

E.5.4 Block 4. Originator name and address. Enter the name and address of the contractor or Government activity
# submitting the request. Use Block 4a for the contractor or
# Government activity name (inclusion of submitting individual's
# name is optional). Use Block 4b for the contractor or Government
# activity address.

E.5.5 Block 5. Deviation or waiver. Enter an "X" in the appropriate box.

E.5.6 Block 6. Classification. The deviation or waiver shall be designated minor, major, or critical in accordance with the definitions in 5.4.3.3 or 5.4.4.3 by entering an "X" in the appropriate box. When short form procedure is specified by contract, the Government will make this determination.

E.5.7 Block 7. Designation for deviation/waiver.

E.5.7.1 Block 7a. Model/Type. Enter model or type designation of the CI for which this request is being submitted. For CSCIs, enter the CSCI identification number.

E.5.7.2 Block 7b. CAGE Code. Enter the CAGE Code for the activity originating the deviation/waiver.

E.5.7.3 Block 7c. System designation. The system or top level CI designation or nomenclature assigned by the Government shall be entered, if known.

E.5.7.4 Block 7d. Deviation/Waiver number. Deviation/waiver identification numbers shall be unique for each CAGE Code identified activity. Contractors shall include the letter "D" as part of the deviation number or the letter "W" as part of the waiver number. Once a number is assigned, that number shall be retained for all subsequent submissions. Unless otherwise authorized by the Government, deviations and waivers shall be separately and consecutively numbered commencing with number one. As an alternative, numbers may be assigned from a separate series

for each system that the contractor is producing. The number of characters in the deviation/waiver number, dash number, and type identification shall not exceed 15.

E.5.8 Block 8. Configuration baseline affected. Check the applicable box for the affected baseline. When short form procedure is specified by contract, the Government will make this determination.

E.5.9 Block 9. Other system/configuration items affected. Check applicable box. If yes, provide summary data in Block 20. When short form procedure is specified by contract, the Government will make this determination.

E.5.10 Block 10. Title of deviation/waiver. Enter a brief descriptive title of the deviation or waiver.

E.5.11 Block 11. Contract number and line item. Enter the complete contract number and line item.

E.5.12 Block 12. Procuring contracting officer. Enter the procuring contracting officer's name, code and telephone number applicable to the CI shown in Block 15.

E.5.13 Block 13. Configuration item nomenclature. Enter the Government assigned name and type designation, if applicable, or authorized name and number of the CI to which the deviation or waiver will apply.

E.5.14 Block 14. Classification of defect (CD).

E.5.14.1 Block 14a. CD number. If either a Government or contractor's CD applies, enter the number assigned.

E.5.14.2 Block 14b. Defect number. If a CD applies, enter the defect number(s) which correspond(s) with the characteristic(s) from which an authorized deviation or waiver is desired.

E.5.14.3 Block 14c. Defect classification. If a CD applies check the box which states the proper classification of the defect number(s) entered in Block 14b.

E.5.15 Block 15. Name of lowest part/assembly affected. An appropriate descriptive name of the part(s) shall be given here without resorting to such terms as "Numerous bits and pieces".

F.5 DETAILED REQUIREMENTS. Detailed instructions for completion of the DD Form 1696.

F.5.1 Block 1. Date. Enter the submittal date of the SCN.

F.5.2 Block 2. Procuring Activity No. To be used by Government for entry of internal processing number, if desired.

F.5.3 Block 3. DODAAC. Enter the DODAAC of the procuring activity.

F.5.4 Block 4. Originator name and address. Enter the name and address of the contractor or Government activity which
# is preparing the SCN. Use Block 4a for the contractor or
# Government activity name (inclusion of submitting individual's
# name is optional). Use Block 4b for the contractor or Government
# activity address.

F.5.5 Block 5. SCN type. Indicate by an "X" in the appropriate block if this is a proposed SCN. If the SCN is being submitted to the Government for final technical approval, prior to distribution according to the contract, both blocks should be left blank. The approved block will be marked by the Government upon approval/contractual implementation.

F.5.6 Block 6. CAGE Code. Enter the CAGE Code of the design activity for the specification identified in Block 7. DLA Cataloging Handbook H4/H8 contains these codes.

F.5.7 Block 7. Specification number. Enter the identification number, including revision letter, of the specification being changed.

F.5.8 Block 8. CAGE Code. Enter the CAGE Code of the activity preparing the SCN.

F.5.9 Block 9. SCN number. Enter the identification number for the SCN being submitted. SCN numbers are issued sequentially for each specification and revision, starting with the number "1".

F.5.10 Block 10. System designation. Enter the type, model, series (or the nomenclature number) for the system (or major item of equipment, if it is not a system) affected.

F.5.11 Block 11. Related ECP number. Enter the complete ECP number (including dash numbers and revisions) that identifies the related engineering change.

F.5.12 Block 12. Contract number. Enter the complete contract number(s) affected by this SCN, if applicable.

F.5.13 Block 13. Contractual authorization. There should be no entry in this block on a proposed SCN. For the approved SCN only, enter the number of the contract modification document used to contractually implement the change. If a unilateral change order is utilized for initial authorization, it's number shall be entered in this block.

F.5.14 Block 14. Configuration item nomenclature. Enter the nomenclature (name and number) of the CI affected by the change. Normally, this will be different than Block 10.

F.5.15 Block 15. Effectivity.

a. For hardware, enter the serial numbers of the items for which this SCN is effective. Usually this will include the applicable production line items plus items approved for a retrofit or modification program.

b. For CSCIs, enter the revision or version of the CSCI to which the change applies. If a new version is warranted by the incorporation of this ECP, the new version number should be entered here.

F.5.16 Block 16. Pages affected by this SCN. (Indicate deletions). The entries in this section (upper half) shall provide information about the pages affected by the SCN being submitted. Enter a listing of all pages being changed by this SCN and indicate whether the pages are being superseded or added (by entering an "S" or an "A" in the column) or deleted (by printing the word "deleted" after the page numbers so affected). A separate line should be used for each category of page change. Once the SCN has been approved by the Government, enter the approval date (from Block 18) in this block.

F.5.17 Block 17. Summary of Previously Changed Pages.

F.5.17.1 Block 17a. SCN number. For all SCNs previously submitted, enter the identification number of each SCN starting with SCN number 1 at the top of the column.

F.5.17.2 Block 17b. Related ECP number. Enter the identification number (including revision designator and dash numbers) of each ECP effected by each previously issued SCN against this specification revision.

# INSTRUCTIONS FOR PREPARATION OF NOTICE OF REVISION UTILIZING DD FORM 1695

## G.1 GENERAL

G.1.1 Scope. This Appendix establishes uniform requirements for preparing DD Form 1695, "Notice of Revision". This Appendix is a mandatory part of the standard. The information contained herein is intended for compliance.

G.1.2 Application. See 5.4.7 for NORs applicability.

## G.2 APPLICABLE DOCUMENTS

This section is not applicable to this Appendix.

## G.3 DEFINITIONS

G.3.1 Definitions used in this Appendix. For purposes of this Appendix, the definitions contained in Section 3 of this standard shall apply.

## G.4 GENERAL REQUIREMENTS

G.4.1 Use of DD Form 1695. The contractor shall use DD Form 1695, Figure 12, to propose revisions to drawings, associated lists, or other referenced documents which require revision after ECP approval. Local reproduction of DD Form 1695 is authorized.

G.5 DETAILED REQUIREMENTS. Detailed instructions for completion of the DD Form 1695.

G.5.1 Block 1. Date. Enter the submittal date of the NOR. Normally this date will be identical to the ECP submittal date.

G.5.2 Block 2. Procuring Activity No.. To be used by Government for entry of interim processing number, if desired.

G.5.3 Block 3. DODAAC. Enter the DODAAC of the procuring activity.

G.5.4 Block 4. Originator name and address. Enter the name and address of the contractor or Government activity
# submitting the proposed NOR. Use Block 4a for the contractor or
# Government activity name (inclusion of submitting individual's
# name is optional). Use Block 4b for the contractor or Government
# activity address.

# G.5.5 Block 5. CAGE code. Enter the CAGE code of the #originator of the ECP. DLA Cataloging Handbook H4/H8 contains #these codes.

G.5.6 Block 6. NOR number. Unless the use of a Government assigned number is prescribed, the originator shall either assign a number or enter the document number and new revision letter as the NOR number. When the requirement in the contract identifies the NOR by ECP number, the originator shall attach a dash number (i.e., xxx-1).

# G.5.7 Block 7. CAGE Code. Enter the CAGE Code of the #original design activity which appears on the document to which #the revision applies (See Block 8). If the original design #activity is not the current design activity, also enter the CAGE #code of the current design activity in Block 13.

G.5.8 Block 8. Document number. Enter the number of the drawing, standard, list or other document(s) to be revised.

G.5.9 Block 9. Title of document. Enter the title of the document to which the NOR applies.

G.5.10 Block 10. Revision letter.

G.5.10.1 Block 10a. Current. Show the existing revision of the document for which the NOR is prepared.

G.5.10.2 Block 10b. New. Show the revision letter proposed for the revision covered by the NOR. Usually the new letter will be the one following the current letter in alphabetical sequence, unless there are known outstanding NORs which may not have been incorporated.

NOTE: The Government may change the new revision letter proposed by the contractor in order to retain a proper sequence of approved revisions.

G.5.11 Block 11. ECP number. Enter the number of the ECP describing the engineering change which necessitates the document revision covered by this NOR.

G.5.12 Block 12. Configuration item (or system) to which ECP applies. Enter Government assigned system designation (if any); otherwise, enter the name and type designation of the CI to which the ECP applies (see Blocks 8a, 8c and 16 on ECP Form 1692).

G.5.13 Block 13. Description of revision. Describe the revision in detail, giving the exact wording of sentences or

# CROSS REFERENCE GUIDANCE ON THE RELATIONSHIP BETWEEN CANCELLED MILITARY STANDARDS AND THIS STANDARD

## K.1 GENERAL

K.1.1 Scope. This Appendix provides information about the requirements paragraphs that were contained in the cancelled standards (identified in 6.4); it provides the related paragraph in this standard which provides essentially the same requirement or that addresses the requirement area. Information contained in this appendix is for guidance only.

K.1.2 Applicability. This Appendix applies to all programs that are planning to apply this standard to an upcoming contract. It is intended to supplement 6.2 and Tables II and III by providing help in identifying requirements from this standard that should be incorporated into the contract.

## K.2 APPLICABLE DOCUMENTS

This section is not applicable to this Appendix.

## K.3 CROSS REFERENCE GUIDANCE

K.3.1 Cross reference from MIL-STD-480B (15 July 1988). Table IV provides a direct cross reference between each of the paragraphs contained in MIL-STD-480B and the related paragraphs in MIL-STD-973. Paragraph numbers from MIL-STD-973 followed by an asterisk (*) address the MIL-STD-480B requirement but do not necessarily require the exact same activities.

K.3.2 Cross reference from MIL-STD-481B (15 July 1988). Table V provides a direct cross reference between each of the paragraphs contained in MIL-STD-481B and the related paragraphs in MIL-STD-973. Paragraph numbers from MIL-STD-973 followed by an asterisk (*) address the MIL-STD-481B requirement but do not necessarily require the exact same activities.

K.3.3 Cross reference from MIL-STD-482A (1 April 1974). Most of the requirements formerly contained in MIL-STD-482A were deleted and replaced by a dictionary of Configuration Status Accounting Data Elements in Appendix I of this standard. That dictionary is intended for guidance purposes only for this issue of MIL-STD-973. Table VI provides a cross reference between each of the paragraphs contained in MIL-STD-482A and the related paragraphs in MIL-STD-973.

**TABLE IV. Cross reference from MIL-STD-480B (15 July 1988).**

| MIL-STD-480B REQUIREMENT | MIL-STD-973 REQUIREMENT | MIL-STD-480B REQUIREMENT | MIL-STD-973 REQUIREMENT |
|---|---|---|---|
| 3 | 3 | 5.1 | 5.4.2.2.1 |
| 4.1 | 4.5 | 5.1.1 | 5.4.2.2.2 |
| | 5.4.1 | 5.1.2 | 5.4.2.3 |
| 4.1.1 | 5.4.2.1 | 5.1.3 | 5.4.2.3.2 |
| 4.1.2 | [EACH TYPE] | 5.1.3.1 | DELETED |
| 4.2 | 5.4.2.2.3 | 5.1.3.2 | 5.4.2.3.2a |
| 4.3 | 4.3.2 | 5.1.3.3 | 5.4.2.3.2b |
| 4.3.1 | N/A | 5.1.3.4 | 5.4.2.3.2c |
| 4.3.2 | 5.4.2.2.3.1 | 5.1.3.5 | 5.4.2.3.2d |
| 4.3.3 | 5.4.2.3.6.1 | 5.1.3.6 | 5.4.2.3.2e |
| 4.3.3.1 | 5.4.2.3.6.2 | 5.1.3.7 | 5.4.2.3.2f |
| 4.3.4 | 5.4.2.3.6.3 | 5.1.3.8 | 5.4.2.3.2g |
| 4.3.5 | 5.4.2.3.6.4 | 5.1.3.9 | 5.4.2.3.2h |
| 4.3.6 | 5.4.2.3.6.5 | 5.1.4 | 5.4.2.3.3 |
| 4.3.7 | 5.5 | 5.1.4.1 | 5.4.2.3.3.1 |
| 4.3.8 | 5.4.2.2.3.3 | 5.1.4.1.1 | 5.4.2.3.3.1.1 |
| 4.3.8.1 | | 5.1.4.2 | 5.4.2.3.3.2 |
| 4.3.8.1.1 | 5.4.6* | 5.1.5 | 5.4.2.3.4 |
| 4.3.8.1.2 | 5.4.7* | 5.1.5.1 | 5.4.2.3.4a |
| 4.3.9 | 5.4.2.2.3.4 | 5.1.5.2 | 5.4.2.3.4b |
| 4.3.10 | 5.4.2.3.4.1 | 5.1.5.3 | 5.4.2.3.4c |
| 4.3.11 | N/A | 5.1.6 | 5.4.2.3.5 |
| 4.4 | | 5.1.6.1 | 5.4.2.3.5.1 |
| 4.4.1 | 5.4.2.3.1.2 | 5.1.6.2 | 5.4.2.3.5.2 |
| 4.4.1.1 | 5.4.2.3.1.3 | 5.1.6.3 | 5.4.2.3.5.3 |
| 4.4.2 | 5.4.2.3.1.1 | 5.2 | N/A |
| 4.5 | | 5.2.1 | N/A |
| 4.5.1 | 5.4.2.4.3 | 5.2.2 | 5.4.2.4.1 |
| 4.5.2 | 5.4.2.4.4 | 5.2.3 | 5.4.2.4.2 |
| 4.5.3 | 5.4.2.4.5 | 5.3 | 5.4.3 |
| 4.6 | 5.4.2.3.1.4 | 5.3.1 | 5.4.3.3 |
| 4.7 | N/A | 5.3.1.1 | 5.4.3.3.1 |
| 4.8 | 5.4.2.2.3.2 | 5.3.1.2 | 5.4.3.3.2 |
| 4.9 | 5.4.2.2.3.2 | 5.3.1.3 | 5.4.3.3.3 |
| 4.10 | E.4.2* | 5.3.2 | 5.4.3.1 |
| 4.11 | E.4.3* | 5.3.3 | 5.4.3.4 |
| 4.12 | G.4.1* | 5.3.3.1 | 5.4.3.4 |
| 4.13 | N/A | 5.3.4 | 5.4.3.4 |
| 4.14 | 6.3* | 5.3.5 | N/A |
| | | 5.3.6 | 5.4.3.5 |
| | | 5.3.6.1 | 5.4.3.5.1 |
| | | 5.3.6.2 | 5.4.3.5.2 |
| | | 5.3.7 | 5.4.5.2 |

**TABLE IV. Cross reference from MIL-STD-480B (15 July 1988) (continued).**

| MIL-STD-480B REQUIREMENT | MIL-STD-973 REQUIREMENT | MIL-STD-480B REQUIREMENT | MIL-STD-973 REQUIREMENT |
|---|---|---|---|
| 5.4 | 5.4.4 | 5.6 | |
| 5.4.1 | 5.4.4.3 | 5.6.1 | 5.4.6* |
| 5.4.1.1 | 5.4.4.3.1 | 5.6.2 | N/A |
| 5.4.1.2 | 5.4.4.3.2 | 5.6.2.1 | 5.4.6* |
| 5.4.1.3 | 5.4.4.3.3 | 5.6.2.2 | 5.4.6.4 |
| 5.4.1.4 | 5.4.4.4* | 5.6.2.3 | 5.4.6.5 |
| 5.4.1.5 | 5.4.4.4* | 5.6.2.4 | 5.4.6.3 |
| 5.4.2 | 5.4.4.4* | 5.6.3 | 5.4.6* |
| 5.4.3 | N/A | 5.6.3.1 | 5.4.6.1 |
| 5.4.4 | 5.4.4.5 | 5.6.3.2 | 5.4.6.2 |
| 5.4.4.1 | 5.4.4.5.1 | | |
| 5.4.4.2 | 5.4.4.5.2 | APPX A | APPX D |
| 5.4.4.3 | 5.4.4.2 | | |
| 5.5 | 5.4.6* | APPX B | APPX E |
| | 5.4.7* | | |
| 5.5.1 | N/A | APPX C | APPX E |
| 5.5.2 | 5.4.7* | | |
| 5.5.3 | N/A | APPX D | APPX G |
| 5.5.4 | N/A | | |
| | | APPX E | APPX F |
| | | APPX F | APPX D |
| | | APPX G | 6.2 |

**TABLE V. Cross reference from MIL-STD-481B (15 July 1988).**

| MIL-STD-481B REQUIREMENT | MIL-STD-973 REQUIREMENT | MIL-STD-481B REQUIREMENT | MIL-STD-973 REQUIREMENT |
|---|---|---|---|
| 1.1 | None | 5.3 | |
| 1.2 | None | 5.3.1 | 5.4.8.4.4 |
| 1.3 | 5.4.8.1* | 5.3.2 | 5.4.8.4.1 |
| 2 | 2* | 5.3.3 | 5.4.8.4.5 |
| 3 | 3* | 5.3.4 | 5.4.8.4.2 |
| 4.1 | 5.4.8.2* | | |
| 4.2 | 5.4.8.3* | | |
| 4.3 | 5.4.8.4* | APPX A | APPX D |
| 5.1 | 5.4.2.2* | | |
| 5.2 | | APPX B | APPX E |
| 5.2.1 | 5.4.8.3.4 | | |
| 5.2.2 | 5.4.8.3.1 | APPX C | APPX E |
| 5.2.3 | 5.4.8.3.5 | | |
| 5.2.4 | 5.4.8.3.2 | | |

**TABLE VI. Cross reference from MIL-STD-482A (1 April 1974).**

| MIL-STD-482A REQUIREMENT | MIL-STD-973 REQUIREMENT | MIL-STD-482A REQUIREMENT | MIL-STD-973 REQUIREMENT |
|---|---|---|---|
| 4 | 5.5 | APPX I | DELETED |
| 4.1 | 5.5.5 | | |
| 4.2 | 5.5.2 | APPX II | APPX I [EYE] |
| 4.2.1 | 5.5.2 | | |
| 4.2.2 | 5.5.3 | APPX III | DELETED |
| 4.2.3 | DELETED | | |
| 5.1 | 5.5.5 | | |
| 5.2 | DELETED | | |
| 5.3 | DELETED | | |

K.3.4 Cross reference from MIL-STD-483A (5 June 1985). Table VII provides a direct cross reference between each of the paragraphs contained in MIL-STD-483A and the related paragraphs in MIL-STD-973. Paragraph numbers from MIL-STD-973 followed by an asterisk (*) address the MIL-STD-483A requirement but do not necessarily require the exact same activities.

K.3.5 Cross reference from MIL-STD-1456A (11 September 1989). Table VIII provides a direct cross reference between each of the paragraphs contained in MIL-STD-1456A and the related paragraphs in MIL-STD-973. Where lettered subparagraphs exist in MIL-STD-973 under the numbered paragraphs listed, those subparagraphs are also applicable unless a specific lettered subparagraph in MIL-STD-973 is cited.

K.3.6 Cross reference from MIL-STD-1521B (5 June 1985). Most of the requirements formerly contained in MIL-STD-1521B, Appendixes G, H, and I, were incorporated into MIL-STD-973; the requirements from Section 4 of MIL-STD-1521B are now essentially repeated in MIL-STD-973. Table IX provides a direct cross reference between each of the paragraphs contained in MIL-STD-483A and the related paragraphs in MIL-STD-973. Paragraph numbers from MIL-STD-973 followed by an asterisk (*) address the MIL-STD-1521B requirement but do not necessarily require the exact same activities.

**TABLE VII. Cross reference from MIL-STD-483A (4 June 1985).**

| MIL-STD-483A REQUIREMENT | MIL-STD-973 REQUIREMENT | MIL-STD-483A REQUIREMENT | MIL-STD-973 REQUIREMENT |
|---|---|---|---|
| 3.1 | 4.1 | Figure 1 | [MIL-STD-490] |
| 3.1.1 | 4.2 | Figure 2 | Figure 1 |
| | 5.2.1 | Figure 3 | DELETED |
| 3.2 | 5.3.4 | Figure 4 | [MIL-STD-490] |
| 3.3 | N/A | | |
| 3.3.1 | [MIL-STD-499] | APPX I | APPX A* |
| 3.3.2 | 5.3.7 | | |
| 3.4 | 4.4 | APPX II | 5.3.7* |
| | 5.3.1 | Figure 5 | DELETED |
| | 5.3.3 | Figure 6 | DELETED |
| 3.4.1 | 5.3.4.1.1 | Figure 7 | DELETED |
| 3.4.2 | 5.3.4.1.2 | | |
| 3.4.3 | 5.3.4.1.3 | APPX III | [MIL-STD-490] |
| 3.4.3.1 | N/A | | |
| 3.4.3.2 | N/A | APPX IV | DELETED |
| 3.4.3.3 | N/A | Figure 8 | DELETED |
| 3.4.4 | 5.3.4.1 | | |
| 3.4.5 | DELETED | APPX V | [MIL-STD-490] |
| 3.4.6 | [MIL-STD-490] | | |
| 3.4.7 | [MIL-STD-490] | APPX VI | [MIL-STD-490] |
| 3.4.7.1 | [MIL-STD-490] | | |
| 3.4.7.2 | [DOD-STD-2167] | APPX VII | 5.4.6 |
| 3.4.7.3 | [MIL-STD-490] | | APPX F |
| 3.4.8 | DELETED | Figure 9 | Figure 11 |
| 3.4.9 | 5.3.4 | 70.10 | DELETED |
| 3.5 | 5.4.6* | Figure 10 | DELETED |
| 3.6 | 5.3.6 | Figure 11 | DELETED |
| 3.7 | 5.3.5 | | |
| | APPX B | APPX VIII | |
| 3.8 | DELETED | 80.1 | N/A |
| 3.9 | 5.6 | 80.2 | N/A |
| 3.9.1 | 5.6.2 | 80.3 | N/A |
| 3.9.2 | 5.6.3 | 80.4 | 5.4.2.2.1* |
| 3.9.3 | N/A | 80.4.1 | N/A |
| 3.9.4 | DELETED | 80.4.2 | 5.4.2.4* |
| 3.9.5 | N/A | 80.5 | N/A |
| 3.10 | 5.4 | 80.5.1 | 5.4.2.3.3.1.1. |
| 3.11 | 5.5.8 | 80.5.2 | N/A |
| | APPX J | 80.5.3 | 5.4.6 |
| 3.12 | 5.5 | 80.5.4 | N/A |
| | APPX H | 80.5.5 | N/A |
| 3.13 | 5.4.2.3.3.1.2 | Figure 12 | DELETED |
| 3.14 | DELETED | Figure 13 | DELETED |
| 3.15 | [MIL-STD-490] | Figure 14 | DELETED |
| | | Figure 15 | DELETED |

**TABLE VII. Cross reference from MIL-STD-483A (4 June 1985) (continued).**

| MIL-STD-483A REQUIREMENT | MIL-STD-973 REQUIREMENT | MIL-STD-483A REQUIREMENT | MIL-STD-973 REQUIREMENT |
|---|---|---|---|
| APPX IX | 5.3.6* | APPX XIII | N/A |
| | | Figure 19 | DELETED |
| APPX X | APPX B | | |
| | | APPX XIV | [IN APPX D*] |
| APPX XI | DELETED | | |
| Figure 16 | DELETED | APPX XV | APPX J |
| Figure 17 | DELETED | Figure 20 | DELETED |
| Figure 18 | DELETED | | |
| | | APPX XVI | DELETED |
| APPX XII | 5.6 | | |
| | | APPX XVII | [MIL-HDBK-61] |

**TABLE VIII. Cross reference from MIL-STD-1456A (11 September 1989).**

| MIL-STD-1456A REQUIREMENT | MIL-STD-973 REQUIREMENT | MIL-STD-1456A REQUIREMENT | MIL-STD-973 REQUIREMENT |
|---|---|---|---|
| 3 (Appendix A) | 3 | 5.2.5.1(incl subs) | A.5.1.6 |
| 4 (incl subs) | 4.2 | 5.2.5.2 | A.5.1.6b |
| 5.1 | A.4.2 | 5.2.5.3 | A.5.1.5 |
| 5.2 | 5.2.1, A.5.1 | 5.2.5.4 | A.5.1.5 |
| 5.2.1 | A.5.1.1 | 5.2.6 (incl subs) | A.5.1.9 |
| 5.2.2 | A.5.1.2 | 5.2.7 (incl subs) | A.5.1.11 |
| 5.2.3 | A.5.1.3 | 5.2.8 | A.5.1.10 |
| 5.2.4 | A.5.1.4 | 5.2.9 (incl subs) | A.5.1.9e |
| 5.2.4.1 | A.5.1.4b | 5.2.10 (incl subs) | A.5.1.12 |
| 5.2.4.2 | A.5.1.7 | 5.2.11 | A.5.1.13 |
| 5.2.4.3 | A.5.1.4d | 5.2.12 | A.5.1.14 |
| 5.2.5 | A.5.1.6 | 5.3 (incl subs) | [MIL-HDBK-61 |

**TABLE IX. Cross reference from MIL-STD-1521B (4 June 1985).**

| MIL-STD-1521B REQUIREMENT | MIL-STD-973 REQUIREMENT | MIL-STD-1521B REQUIREMENT | MIL-STD-973 REQUIREMENT |
|---|---|---|---|
| 4.1 | 5.6.1 | APPX H - PCA | |
| 4.1.1 | 5.6.1.1 | 80.1 | 5.6.3* |
| 4.1.2 | 5.6.1.2 | 80.2 | 5.6.3.1 |
| 4.1.3 | 5.6.1.3 | 80.2.1 | 5.6.3.1 |
| 4.1.3.1 | 5.6.1.3a | 80.3 | 5.6.3.2 |
| 4.1.3.2 | N/A | 80.3.1 | 5.6.3.2 |
| 4.1.3.3 | 5.6.1.3b | 80.3.2 | 5.6.3.2d |
| 4.1.3.4 | 5.6.1.3c | 80.3.3 | 5.6.3.2e |
| 4.1.3.5 | 5.6.1.3d | 80.3.4 | 5.6.3.2.5 |
| 4.1.3.6 | 5.6.1.3e | 80.4 | 5.6.3.3 |
| 4.2 | 5.6.1.4 | 80.4.1 | 5.6.3.3 |
| 4.3 | 5.6.1.3d* | 80.4.1a | 5.6.3.3a |
| | 5.6.2.5 | 80.4.1b | 5.6.3.3b |
| | 5.6.3.5 | 80.4.1c | 5.6.3.3c |
| | | 80.4.2 | 5.6.3.3e |
| | | 80.4.3 | 5.6.3.3f |
| APPX G - FCA | | | APPX B |
| 70.1 | 5.6.2* | 80.4.4 | N/A |
| 70.2 | 5.6.2.1 | 80.4.5 | 5.6.3.3g |
| 70.2.1 | 5.6.2.1 | 80.4.6 | 5.6.3.3h |
| 70.3 | 5.6.2.2 | 80.4.7 | 5.6.3.3i |
| 70.3.1 | 5.6.2.2a | 80.4.8 | 5.6.3.3j |
| 70.4 | 5.6.2.3 | 80.4.9 | 5.6.3.3k |
| 70.4.1 | 5.6.2.3a | 80.4.10 | 5.6.3.3l |
| 70.4.2 | 5.6.2.3b | 80.5 | 5.6.3.4 |
| 70.4.3 | N/A | | |
| 70.4.4 | 5.6.2.3d | | |
| 70.4.5 | 5.6.2.3e* | | |
| 70.4.6 | 5.6.2.3f | APPX I - FQR | DELETED |
| 70.4.7 | 5.6.2.3g | | |
| 70.4.8 | 5.6.2.3h | | |
| 70.4.9 | 5.6.2.2c | | |
| 70.4.10 | N/A | | |
| 70.4.11 | 5.6.2.3i | | |
| 70.4.12 | 5.6.2.3j* | | |
| 70.5 | 5.6.2.4* | | |

K.3.7 Cross reference from DOD-STD-2167A (29 February 1988). The requirements for various configuration management activities contained in DOD-STD-2167A have been integrated into the overall configuration management requirements in MIL-STD-973. Table X provides a cross reference between applicable paragraphs contained in DOD-STD-2167A and the related paragraphs in MIL-STD-973 into which these requirements have been integrated.

**TABLE X. Cross reference from MIL-STD-2167A (29 February 1988).**

| MIL-STD-2167A REQUIREMENT | MIL-STD-973 REQUIREMENT | MIL-STD-2167A REQUIREMENT | MIL-STD-973 REQUIREMENT |
|---|---|---|---|
| 4.1.8 | 5.3.3.3 | 5.1.5 | 4.3 |
| 4.1.9 | 5.3.3 | | 5.3.3.1 |
| 4.1.10 | 5.3.3 | 5.2.5 | 5.3.4 |
| 4.5 | 4.2 | 5.3.5 | 4.3 |
| | 4.4 | | 5.3.3.1 |
| | 4.5 | 5.4.5 | 4.3 |
| | 4.6 | | 5.3.3.1 |
| | 4.7 | | 5.3.4 |
| 4.5.1 | 4.4 | 5.5.5 | 4.3 |
| | 5.3.4 | | 5.3.3.1 |
| | 5.3.6 | | 5.3.3.3 |
| | 5.3.6.5 | | 5.3.4 |
| | 5.3.6.7.1 | 5.6.5 | 5.3.3 |
| | 5.3.6.7.2 | 5.7.5 | 5.3.4 |
| | 5.3.6.7.3 | | 5.6 |
| | 5.3.7 | | 5.6.3.2 |
| 4.5.3 | 4.6 | 5.8.5 | 5.4.2 |
| | 5.5 | | |
| | APPX H | | |
| 4.5.5 | 5.4.2 | | |